

**WORLDWIDE EMERGING ENVIRONMENTAL ISSUES AFFECTING THE U.S. MILITARY**  
**Contract No: DAAD19-02-D-0001/ Delivery Order 0456 with Battelle Columbus**  
**Operations for the U.S. Army Environmental Policy Institute**

**Summarizing Environmental Security Monthly Scanning**  
**July 2007—December 2007**

The purpose of the monthly scanning reports is to assess worldwide environment-related events in order to identify and analyze issues that might trigger future international environmental regulations and/or modifications to the existing ones with potential implications for the military.

Environmental security continues to move up on national, regional, and international agendas due to increasing scientific evidence of climate change, extreme weather events, the number and intensity of natural disasters, pollution, potentials for pandemics, and nuclear-biological-chemical threats. The *Army Strategy on the Environment* reflects this new direction.

Calls for improving international environmental governance are increasing. The technological ability to identify environmental threats and crimes is becoming cost-effective through new sensors and communications. The UN Security Council, the Organization for Security and Cooperation in Europe, and other international bodies are paying increased attention to problems of environmental security. Environmental damages that people and organizations got away with in the past are less likely to escape detection and punishment in the future.

Environmental diplomacy is increasingly being used to support conflict prevention efforts and to build international confidence, while human security is gaining recognition in both military and diplomatic circles. Environmental security is a link between the two.

The Millennium Project defines environmental security as environmental viability for life support, with three sub-elements:

- preventing or repairing military damage to the environment,
- preventing or responding to environmentally caused conflicts, and
- protecting the environment due to its inherent moral value.

This summarizing paper presents the events and emerging environmental security-related issues identified since July 2007, organized around this definition.

Some 175 items have been identified during the second half of the year 2007 and over 1,000 items since August 2002 when the Millennium Project began this monthly scanning. All the items and their sources, organized by the month when they were identified, are available on the Millennium Project's Web site, <http://www.millennium-project.org/millennium/env-scanning.html> and the version with Military Implications is available on the AEPI web site <http://www.aepi.army.mil/rpt-weei.html>.

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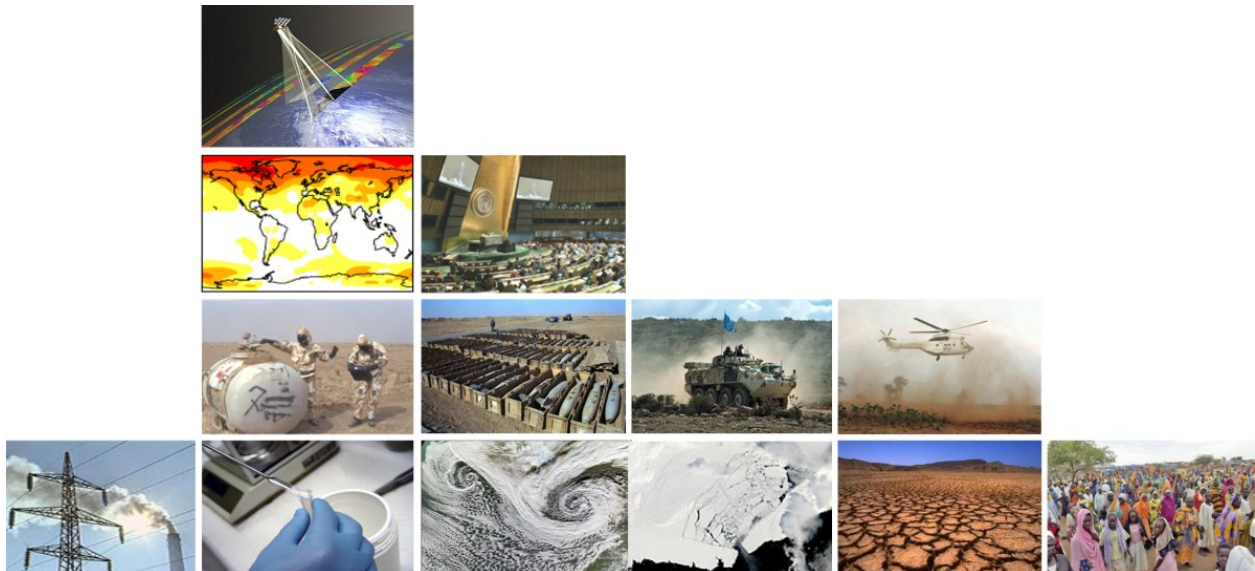
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*In coming decades, changes in the environment—and the resulting upheavals, from droughts to inundated coastal areas—are likely to become a major driver of war and conflict.*

UN Secretary-General Ban Ki-moon  
“Global Warming: Confronting the Crisis” Conference  
New York, March 1, 2007

*There are multiple environmental challenges facing the world and the security of communities and countries. Climate change is perhaps the most high profile.*

Achim Steiner  
UN Under-Secretary General and  
Executive Director UN Environment Programme (UNEP)



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## 1.A Preventing or repairing military damage to the environment

### ENVIRONMENTAL SECURITY RISES ON THE INTERNATIONAL POLITICAL AGENDA

#### UN to Shift Attention from Reaction to Prevention of Conflicts

The UN Security Council agreed that the UN should improve its capacity to prevent conflicts rather than just react after the conflicts have occurred. To move from a culture of ‘reaction’ to one of effective ‘prevention,’ more UN resources should be focused to identify possible causes of conflict and set up potential conflict detection systems, to promote preventive action in response to threats to international peace and security. Thus, efforts should increase to address the root causes of conflicts, develop early warning systems, mediate disputes, and coordinate efforts of UN bodies, regional organizations and others trying to prevent wars. Along the same lines, in fragile post-conflict countries, peacebuilding should be focused on issues that are potential causes for relapsing into conflict. Over the past five years, the UN has spent \$18 billion on peacekeeping operations but has not devoted similar resources to conflict prevention. [See also *UN Conflict Prevention Strategy Includes Environmental Dimension* in August 2006 and *UN Security Council Adds Natural Resources Management and Environmental Issues to Future Peacekeeping Missions* in June 2007 environmental security reports]

Meantime, the International Policing Advisory Council (IPAC), which held a 2-day meeting in Canberra, Australia, highlighted the unprecedented global demand for UN peacekeepers and police officers, and stressed the importance of better cooperation with the UN to prevent and face conflict-related challenges. [August 2007. [Military Implications, Sources](#)]

#### UN General Assembly Focuses Government Leaders on Climate Change

The theme of the 62nd session of the UN General Assembly was “Responding to Climate Change.” Speeches by heads of state and governments talked about climate change, rising sea levels, droughts and floods—as issues in themselves, but also as related to poverty and social problems, and ultimately to global security. There was again mention of strengthening the UNEP by transforming it into a UN Environmental Organization. This annual General Assembly was preceded by a high-level meeting convened by the UN Secretary General focusing specifically on climate change and actions to address it. Prior to this meeting was the annual UN-NGO conference that also focused on climate change. These meetings demonstrated a near consensus that urgent action is necessary, and that the UN Framework for Climate Change is the appropriate forum for discussions. The President of the UN General Assembly is preparing to create a Global Compact on Climate Change tentatively planned for release in early 2008 from which many agreements could flow. All of this focuses on the next high-level meeting on climate change to be held in December, in Bali, Indonesia. [September 2007. [Military Implications, Sources](#)]

#### OSCE Adopts Ministerial Declaration on Environment and Security

On November 30, the Organization for Security and Cooperation in Europe (OSCE) agreed on a Ministerial Declaration on Environment and Security. However, the OSCE failed to reach



consensus on a detailed environmental security strategy. Nevertheless, Ambassador Bernard Snoy, Coordinator of OSCE Economic and Environmental Activities, is confident that the level of OSCE's commitment in the field of environmental security will increase, especially since countries east of Vienna stress their specific needs regarding these issues. [November 2007. [Military Implications, Source](#)]

**OSCE Parliamentary Assembly Agrees to Advance Work on Environmental Security Strategy**  
The OSCE Parliamentary Assembly passed the resolution to support efforts of OSCE's 56 participating States and 11 Partners "to tackle environmental security threats and thus to promote stability;" to continue work, "to develop an Environmental Security Strategy for the Organization to be debated at the OSCE Ministerial Council in November in Madrid;" to recommend that "the OSCE works closely together with OSCE participating states as well as national and other international organizations experienced in the field of environmental security; and "Calls upon OSCE participating countries to develop their own environmental security strategies." [July 2007. [Military Implications, Sources](#)]

### **OSCE-NATO Workshop on Environmental Security in the Mediterranean**

The "Water Scarcity, Land Degradation and Desertification in the Mediterranean region—Environment and Security Aspects" workshop held in Valencia, December 10-11, was organized jointly by the NATO Public Diplomacy Division and the Organization for Security and Co-operation in Europe (OSCE) Office of the Coordinator for Economic and Environmental Activities. Policymakers, scientists and experts assessed implications that water scarcity, land degradation, and desertification might have on population movements and security in the Mediterranean region. Since water management also offers opportunities for cooperation and conflict prevention, specific roles for the OSCE, NATO and other organizations were explored with OSCE Mediterranean Partners for Co-operation and the NATO Mediterranean Dialogue, which include Algeria, Egypt, Israel, Jordan, Mauritania, Morocco and Tunisia. [See also *OSCE Adopts Ministerial Declaration on Environment and Security* in November 2007 and other previous environmental security reports on similar issues.] [December 2007. [Military Implications, Sources](#)]

### **Environmental Security Focus of the Nobel Peace Prize for 2007**

The Nobel Committee said it wanted to bring into sharper focus the "increased danger of violent conflicts and wars, within and between states", posed by climate change. As a result, the Intergovernmental Panel on Climate Change (IPCC) and Al Gore were awarded the Nobel Peace Prize 2007 "for their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures that are needed to counteract such change." Awarding this year's Nobel Peace Prize for climate change work and the 2004 Prize to Wangari Maathai "for her contribution to sustainable development, democracy and peace" compellingly acknowledges the importance of the environmental issue to international security. [October 2007. [Military Implications, Sources](#)]

### **UN Establishes the International Panel for Sustainable Resource Management**

The International Panel for Sustainable Resource Management (IPSRM) is a new international think tank established by UNEP to provide expert global assessments on the use, security, and



environmental impact of global resources. Just as the Intergovernmental Panel on Climate Change (IPCC) founded in 1988 has evolved with the participation of 2,500 scientists from 60 countries to produce the state of knowledge of global climate change, so too could IPSRM do one day for the global knowledge of resource management. It will begin by providing a systemic and holistic framework for understanding resources from all phases of the resources' life cycles to help identify interlinkages, gaps, and opportunities for policy makers to take action. The Panel is supported by a Secretariat, hosted by the Sustainable Consumption and Production Branch of UNEP's Division of Technology, Industry and Economics, based in Paris. National participation in the panel has been expressed so far from Canada, China, Egypt, Finland, Germany, Hungary, Italy, Japan, Netherlands, Norway, Russia, South Africa, and Tanzania. NGOs such as the World Business Council on Sustainable Development and the International Council for Science (ICSU) have also asked to participate. [November 2007. [Military Implications, Sources](#)]

## **CONFLICT AND POST-CONFLICT ENVIRONMENTAL SECURITY ISSUES**

### **UN Secretary-General on the International Day for Preventing the Exploitation of the Environment in War and Armed Conflict**

In advance of the November 6th International Day for Preventing the Exploitation of the Environment in War and Armed Conflict, UN Secretary-General Ban Ki-moon urged all nations to renew their commitments preventing environmental exploitation in war and armed conflict. "Taking ecological considerations into account is crucial if we are to avoid longer-term environmental problems that can undermine security and development, and lead to further cycles of conflict and displacement," he said in a message and added that massive migrations caused by conflicts also severely damage the environment. UNEP found that more than 2 million displaced people since 2003 had caused severe deforestation, land degradation, and overexploitation of groundwater resources around the larger camps for displaced persons. [October 2007. [Military Implications, Sources](#)]

### **Environmental Aspects of the Darfur Conflict**

#### ICC Urged to Consider Environmental Crimes in Darfur Cases

The International Criminal Court (ICC) has begun the prosecution process related to the Darfur conflict, but so far there is no mention of environmental crime, although environmental degradation is recognized as one of the underlying causes of the region's devastating war. Refugees, human rights groups and legal experts have urged the ICC to consider man-made environmental crimes along with terror and mass killings in the prosecution of Sudanese officials and Arab Janjaweed. They argue that the ecological crisis—recognized as partly caused by climate change—was aggravated by the destruction of vegetation, land, and food and water sources that was ordered by government officials to force people to move. [August 2007. [Military Implications, Sources](#)]

#### Water Shortage for 2.2 Million in Refugee Camps Could Increase Darfur Conflict

Water shortage might impede the peace process in Darfur. The number of refugees in camps reached 2.2 million in July 2007 and the risk of unrest is increasing as the water wells are

running dry. As stipulated by the UN Security Council's resolution adopted in July, a joint UN-African Union force of 26,000 multinational peacekeepers should be deployed in the area. However, their deployment and work are jeopardized by lack of resources, mainly water. [August 2007. [Military Implications, Sources](#)]

### **Disputes over Oil Might Reignite Congo-Uganda Conflict**

Since the discovery of oil at Lake Albert in the border region of Uganda and Congo, tension between the two counties has escalated. Uganda responded to a series of violent incidents with several casualties by increasing troops along the border, and the media were talking of a "possible invasion of Congo". "This is about oil. The stakes are enormous," says Congo's petroleum minister, Lambert Mende. Both Uganda—a poor country, and Congo—seeking to rebuild after a ruinous war, have high hopes in a better, oil-fueled, future. Negotiations on the future joint management of reserves began, although the reserves are not yet assessed. [August 2007. [Military Implications, Source](#)]

### **Depleted Uranium Environmental Concerns Resurfacing**

Concerns over the environmental and health effects of the use of depleted uranium munitions are resurfacing and increasing worldwide. The debate ranges from extensive articles in the news to testimonials by scientists and health tests of military veterans and active duty personnel who may have been exposed to depleted uranium. A British study by the University of Leicester—using MC-ICP mass spectrometry for detecting an individual's exposure to depleted uranium—reveals that, depending on the rate of exposure, depleted uranium can be traced in urine 20 years after inhalation, even when the concentration was at the low end of the normal range. [See also *Conclusions on Health and Environmental Impact of 1990-1991 Gulf War* in July 2005 and other previous items on this theme, as well as *Sensitive Uranium Detector Using DNA* in February 2007 environmental security reports.] [November 2007. [Military Implications, Sources](#)]

### **Negotiations Continue for an International Instrument to Ban Cluster Munitions**

Cluster munitions were the focus of the Convention on Certain Conventional Weapons (CCW) meeting held in Geneva this month that resulted in a weak mandate with no legally binding document or language referring to cluster bomb prohibition or timeline. The EU's proposal to negotiate a treaty in 2008 banning cluster munitions was rejected. UN Secretary-General Ban Ki-moon underlined in his message to the delegates the necessity of a legally binding international instrument that would prohibit the use, development, stockpiling and transfer of cluster munitions; while promoting the destruction of current stockpiles, battlefield clearance and risk mitigation activities. This is consistent with the aim of the Oslo Process to negotiate a ban on cluster munitions. On November 5, the Global Day of Action to Ban Cluster Bombs, public actions took place in 40 countries, calling on governments to take actions for banning cluster munitions. Supporters hope that momentum was created to advance the negotiations next month, when more than 100 countries will gather in Vienna to discuss a draft treaty. [See also *Progress Made on Banning Cluster Bombs* in March 2007 and other items on this theme in previous environmental security reports.] [November 2007. [Military Implications, Sources](#)]

## Reports highlighting the link between environment and security

*Human Development Report 2007-08. Fighting climate change: Human solidarity in a divided world.* The 2007-08 edition of UNDP's Human Development Report focuses on the threat of climate change. Climate change, according to the report, is the 'defining human development challenge of the 21st Century' and the world must take actions today to avoid catastrophic consequences. For example, by 2080 an additional 600 million people in sub-Saharan Africa could suffer from malnutrition due to climate change, and a 3–4°C increase in global temperature could result in 330 million people being permanently or temporarily displaced through flooding. Pointing to the fact that the poorest are most vulnerable and suffer the earliest and most damaging setbacks, the report warns that actions taken—or not taken—in the years ahead will have a profound bearing on the future course of human development. [November 2007. [Military Implications, Sources](#)]

*A Climate of Conflict* by the London-based International Alert conflict resolution group analyzes the possible link between climate change and conflict. The report warns that unless adequate and timely adaptation policies are implemented, more than half of the world's nations are at risk. It identifies 46 countries—home to 2.7 billion people—at high risk of armed conflict, while another 56 states—with a total population of 1.2 billion—are at risk of political instability. Fragile states have particular vulnerability; therefore, reconstruction policies should include environmental and climate change adaptability strategies, underlines Dan Smith, Secretary General of International Alert. [November 2007. [Military Implications, Sources](#)]

*The Age of Consequences: The Foreign Policy and National Security Implications of Global Climate Change*, by the Center for Strategic and International Studies and the Center for a New American Security presents the possible security implications of climate change by three plausible scenarios:

- scenario 1: Expected Climate Change to 2040 (based on the medium IPCC projections, temperature rise 1.3°C above 1990 levels and sea level rise 0.23m);
- scenario 2: Severe Climate Change to 2040 (more severe warming at 2.6°C and 0.52m sea level rise has exponentially more devastating effects on agriculture, ecosystem and population, and water scarcity is affecting 2 billion people);
- scenario 3: Catastrophic Climate Change to 2100 (an expansion of Scenario 2 from 2040 to 2100, assuming average global temperature rises of 5.6°C above 1990 levels, mountain glaciers virtually gone, and sea level rise by 2 m relative to 1990, rendering low-lying coastal regions uninhabitable, and severely affecting all areas of life and ecosystems).

The report includes a Summary of key environmental and national security implications of the three scenarios, which “makes clear, climate change has the potential to be one of the greatest national security challenges that this or any other generation of policymakers is likely to confront.” [November 2007. [Military Implications, Sources](#)]

## NATIONAL/REGIONAL ENVIRONMENTAL STRATEGIES AFFECTING MILITARY ACTIVITIES

### UNEP and South Korea to Help North Korea's Environmental Management

UNEP and the Republic of Korea agreed to set up a Trust Fund for projects addressing key environmental issues in the Democratic People's Republic of Korea. This first collaboration of the two countries on environmental matters aims to address urgent problems in the DPRK related

to forest, water quality, air pollution, land degradation and biodiversity, as well as support eco-housing initiatives, conservation management, environmental education, clean development mechanisms and renewable energy technology, and environmental monitoring. [November 2007. [Military Implications, Source](#)]

### **Asian New Strategy to Improve Health and Environment**

At the First Ministerial Regional Forum on Environment and Health, held in Bangkok, August 8-9, 2007, top environmental and health officials from Southeast and East Asian countries adopted the Bangkok Declaration on Environment and Health. The Declaration aims to set up strategies to reduce the estimated 6.6 million annual deaths—representing approximately 25% of all deaths in the region in a year—attributable to various environmental health risks such as air pollution, solid and hazardous wastes, and numerous man-made disasters. The Declaration provides a mechanism for improving collaboration in policy and regulatory frameworks at the national and regional level, and promotes the implementation of integrated environmental health strategies and regulations. It covers areas from air and water quality, to hazardous substances and climate change—including contingency planning, preparedness and response to environmental health emergencies. A second Ministerial Regional Forum is planned for 2010. [August 2007. [Military Implications, Sources](#)]

### **Climate Change Issues May Have Determined Australian Election**

Environmental policy seems to have been one of the determining factors in Australia's election and the success of the Labor Party, which has environmental issues such as climate change and signing the Kyoto Protocol as top priorities. It is therefore expected that Australia will adopt more environmentally protective policies. Given its status as a major regional power, Australia's attitude could affect international and regional environmental deliberations. [November 2007. [Military Implications, Sources](#)]

### **Environment and Security Program in the East-Caspian Region**

The regional meeting of the Environment and Security (ENSVEC) Program in the East-Caspian region was held in Ashgabat, Turkmenistan, and was attended by leading specialists from Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan, Russia, Italy, Iran, and Afghanistan, as well as representatives of OSCE, NATO, UNEP and UNDP. In the framework of implementation of the ENSVEC program for environmental protection and cooperation in the region, the focus was on the East-Caspian Sea's coastal area development, pollution reduction, and ecological preservation and restoration. The start of the ENSVEC program in the Atyrau and Mangistau oblasts of Kazakhstan and Turkmenistan was also announced. The Central Asia ENSVEC program priority regions include: the Fergana Valley, the Caspian Sea's Eastern Coast, the Semipalatinsk Nuclear Ground, the Amu-Darya river basin, and the Aral Sea. [September 2007. [Military Implications, Sources](#)]

### **Environmental security among top three priorities in Australia-China talks**

Among other things, China and Australia agreed during private talks during the September APEC meeting to cooperate on clean coal and nuclear energy to reduce greenhouse gas

emissions. They plan to continue annual strategic security meetings including environmental security matters. [September 2007. [Military Implications, Source](#)]

### **President Putin Cites Environmental Security as Key Criterion for Caspian Energy Projects**

During the summit of five Caspian nations in Iran, Russian President Vladimir Putin said “Environmental security must become a yardstick for measuring the safety of all projects”, and “projects that may inflict serious environmental damage to the region cannot be implemented without prior discussion by all five Caspian nations,” suggesting that each country should have a virtual veto on energy projects in the region. Note: in September 2006, Russia threatened to revoke environmental authorization for the Sakhalin II project. However, in April 2007, when Gazprom (state owned company) gained 50%+1 share in the Sakhalin Energy Investment Company, the President announced that the alleged environmental problems were adequately addressed. [October 2007. [Military Implications, Sources](#)]

### **To Join the EU, Balkan Countries Should Increase Environmental Efforts**

Balkan countries wanting to join the EU—Croatia, Bosnia, Serbia, FYR Macedonia, Montenegro and Albania—must pay as much attention to environmental protection as they do to economic development if they want to join the bloc, says the UNDP report Balkan Vital Graphics: environment without borders. Spending on environmental protection should increase from the present share of less than 0.1% to 0.7% of the GDP, to at least 1.5-2%. The six Balkan countries are working on a joint environmental strategy, but an agreement is yet to be reached. [October 2007. [Military Implications, Sources](#)]

### **France Could Add Teeth to the Kyoto Protocol**

France’s President Nicolas Sarkozy is proposing a tax revision that would favor environmentally friendly practices and lower labor taxes, while increasing taxes on highly polluting vehicles and imports from countries that do not respect the Kyoto Protocol. Sarkozy’s proposals are expected to be passed by parliament early next year. France also intends to expand its strategy to the EU, urging Brussels to consider EU tariffs for imports from non-Kyoto protocol countries. [October 2007. [Military Implications, Sources](#)]

### **UK to Establish an Independent Climate Committee**

The parliament of the UK plans to establish an independent climate committee that would report to the parliament on an annual basis, said MP Elliot Morley, member of the UK Parliament and the Government’s Special Representative on the Gleneagles Dialogue on Climate Change, Clean Energy and Sustainability, addressing NATO’s Advanced research Workshop on “Energy and Environmental Challenges to Security.”

During his first speech as the UK’s Prime Minister, Gordon Brown stressed the importance of addressing climate change in a global framework and said, “As we move to a post 2012 global climate change agreement, we need a strengthened UN role for environmental protection.”

Scientists and policymakers attending the UK Environment Agency annual conference called for increased efforts to address climate change effects. The Agency’s chief executive, Lady Young, said that climate change needs to be addressed like “World War Three”, noting that current

adaptation measures are “too little, too slowly.” UK Environment Secretary Hilary Benn warned that climate change “is not just an environmental challenge. It’s also a security challenge, a migration challenge, a political challenge and an economic challenge as well.” [November 2007. [Military Implications, Sources](#)]

### **China May Restructure Environmental Effort**

Chinese President Hu Jintao, opening the ruling Communist Party’s five-yearly Congress, called the environment key to “the survival and development of the Chinese nation” and said that China should improve its economic/environment balance. There are speculations that China’s State Environmental Protection Administration may be given more status and power as early as next year. “It is still under discussion how the new organization should be,” said Xia Guang, director of the Policy Research Center for Environment and Economy, a think tank within SEPA, during a recent talk at Brown University. [See also *China’s Climate Change and S&T Action Plan* in June 2007, *China’s President Hu Ordered Environmental Regulations for Military Activities* in April 2006, and other related items in previous environmental security reports.] [October 2007. [Military Implications, Source](#)]

### **China's Energy Conditions and Policies—White Paper**

China’s Information Office of the State Council issued the country’s first-ever, white paper on its energy conditions and policies. The paper indicates a shift towards a more environment-centered energy policy, prioritizing sustainable development based on S&T, and strengthened international cooperation in the field of energy. It emphasizes, “China did not, does not and will not pose any threat to the world’s energy security.” [See also *China May Restructure Environmental Effort* in October 2007, and other related items in previous environmental security reports.] [December 2007. [Military Implications, Sources](#)]

### **The Environmental Dimension of Asian Security**

*The Environmental Dimension of Asian Security. Conflict and Cooperation over Energy, Resources, and Pollution* “published by the U.S. Institute of Peace, analyzes the nexus between environmental and natural resources (ENR) problems and security in Northeast Asia” says a book review. The book argues that in the region “there is very little regional cooperation, despite the need to manage disputes over energy, natural resources, and pervasive pollution.” [November 2007. [Military Implications, Source](#)]

## **TECHNOLOGICAL BREAKTHROUGHS WITH ENVIRONMENTAL SECURITY IMPLICATIONS**

### **Computer Technology and Robotics**

[NASA-Developed Model to Help Reduce Famine](#)  
[Software Package Monitors Buildings' Power](#)



## **NASA-Developed Model to Help Reduce Famine**

Researchers from NASA's Goddard Space Flight Center have developed a computer model to anticipate food shortages brought on by drought, combining data from satellite remote sensing of crop growth, and food prices. [July 2007. [Military Implications, Source](#)]

## **Software Package Monitors Buildings' Power**

The Sun Flow Monitor System software package marketed by Live Data Systems, Inc., Branchburg NJ, monitors a building's power sources, conventional or alternative, and its building management systems. This new software produces reports, which can aid in minimizing the structure's environmental demand. [July 2007. [Military Implications, Source](#)]

## **New Detection and Cleanup Techniques**

[Synthetic Biology to Combat Harmful 'Biofilms'](#)

[Tiny Cantilevers Detect Contaminants](#)

[Portable Sensor to Detect Exposure to Chemical or Nerve Agents](#)

[Antibody-bearing Gel Can Disinfect Biologically Contaminated Areas](#)

[Advance in Assessing Metabolites of Diesel Exhaust component 1-nitropyrene in Humans](#)

[Landmine Detection by Using Ground-penetrating Radar Technique](#)

[Porous Semiconducting Aerogels Purify Water and Hydrogen](#)

[Millimeter-wave Spectroscopy Provides Environmental Sensing](#)

[New Chemical Helps Protect Burned-over Soil from Erosion](#)

[New Technique Promises Ultra-sensitive Biosensors](#)

[EU Launches Mobile Carbon Tracking](#)

## **Synthetic Biology to Combat Harmful 'Biofilms'**

A team of researchers from MIT and Boston University has genetically engineered an E. coli bacteriophage to produce an enzyme that degrades the biofilm that the bacterium often produces and which interferes with the action of the phage. The researchers applied this technique to E. coli biofilms, (producing a hundred-fold phage performance improvement) but they believe that their approach can be used with many other bacteria. For example, it might be possible for a modified anthrax bacteriophage to be sprayed on an area affected by anthrax, and then wiped off. [July 2007. [Military Implications, Sources](#)]

## **Tiny Cantilevers Detect Contaminants**

Prof. Anja Boisen and colleagues at the Department of Micro- and Nanotechnology, Technical University of Denmark, have created a detection device for contaminants, based on the change in resistance of a cantilever, 40×200 microns in size, when a contaminant molecule or bacterium binds to its antibody-coated surface and bends it. A variation works by using a similar element as the lid of a pigment-containing box, so when the strip bends, it releases a detectable color. [July 2007. [Military Implications, Sources](#)]



### **Portable Sensor to Detect Exposure to Chemical or Nerve Agents**

The U.S. Pacific Northwest National Laboratory is developing a portable sensor able to identify exposure to chemical or nerve agents by testing blood or saliva samples. The device will be based on higher sensitivity test strips. Its development is funded by the National Institutes of Health and the project is estimated to take five years. [August 2007. [Military Implications, Source](#)]

### **Antibody-bearing Gel Can Disinfect Biologically Contaminated Areas**

The Ectoplasm Project is developing an environmental cleanup material consisting of a polymer solution that contains antibodies to a biological agent, like anthrax. It is being developed by Anadis, of Melbourne, Australia, with funding from the Research Support for Counter Terrorism (RSCT) Programme. The antibody-based gel will allow decontamination teams to spray a possibly contaminated area with the substance, for biohazard detection, containment, and decontamination. The gel layer can be stripped off surfaces without damaging them, and discarded using safety precautions. The substance is expected to be ready for use in field operations worldwide within two years. [August 2007. [Military Implications, Sources](#)]

### **Advance in Assessing Metabolites of Diesel Exhaust component 1-nitropyrene in Humans**

Researchers at Kanazawa University and the University of Washington reported developing a method for measuring metabolites of 1-nitropyrene (1-NT) in human urine. 1-NT is abundant in diesel exhaust particulates and a significant mutagenic agent. This appears to be a breakthrough in the quest for ways to evaluate human health effects of diesel engine emission inhalation. [August 2007. [Military Implications, Sources](#)]

### **Landmine Detection by Using Ground-penetrating Radar Technique**

A wide-band earth-penetrating radar offering promise of improved capability for landmine detection was developed by A. G. Yarovoy, P. van Genderen, and colleagues at the International Research Centre for Telecommunications-transmission and Radar of the Delft University of Technology, the Netherlands. [August 2007. [Military Implications, Source](#)]

### **Porous Semiconducting Aerogels Purify Water and Hydrogen**

Scientists of the Argonne National Laboratory, together with colleagues at Northwestern and Michigan State Universities, have developed chalcogenide-based porous semiconducting aerogels which efficiently (99.99%) remove contaminants like heavy metals from water and also filter out catalyst-poisoning impurities from hydrogen intended for use in fuel cells. [August 2007. [Military Implications, Source](#)]

### **Millimeter-wave Spectroscopy Provides Environmental Sensing**

Scientists from the Argonne National Laboratory developed a new technology, passive millimeter-wave spectroscopy (PmmWS), which can detect specific molecules in concentrations as low as 100-1000 ppm at ranges of up to a few kilometers. The new system improves on earlier ones by being less susceptible to interference from clouds and other atmospheric phenomena,

having a much longer range, and being less expensive. [September 2007. [Military Implications, Source](#)]

### **New Chemical Helps Protect Burned-over Soil from Erosion**

ENCAP of Green Bay WI, a lawn care small business, introduced a new product, PAM-12, that claimed to be more effective and less costly in treating flame- and smoke-damaged soil than previous approaches so that it becomes more absorbent and less susceptible to erosion. It does this by causing the soil to form into tiny clumps around which water will flow instead of running off, aiding in the process of restoring the natural environment for vegetation re-growth. [September 2007. [Military Implications, Sources](#)]

### **New Technique Promises Ultra-sensitive Biosensors**

Scientists at MIT, led by Ned Thomas and Patrick Doyle, have developed a technique for producing millions of bar-coded 3D latticework microparticles in which DNA or other biotags can be attached. According to an announcement, “With conventional solid microarrays and particles, biotags only adorn the probe’s surface. In contrast, biotags can attach inside the latticework particles, increasing the number of target molecules that bind to a particle, and therefore producing a more intense fluorescent signal”. The developers believe this technique may increase the biosensing device’s sensitivity by a factor of 10,000. Commercialization of this diagnostic tool is expected within two years. [December 2007. [Military Implications, Source](#)]

### **EU Launches Mobile Carbon Tracking**

The mobGAS program is a personal mobile phone application that enables users to learn the amount of greenhouse gases produced by their daily activities. The software is available in 21 languages and is free to download to a mobile phone. Users can input daily activities and calculate the daily, weekly, and yearly emissions via a secure website. The system compares the user’s emissions with national and world averages. The system was developed by the Joint Research Center of the European Commission to help raise public awareness and motivation to reduce GHG emissions. [December 2007. [Military Implications, Source](#)]

### **Space Technology for Environmental Security**

#### **New UN Office Using Space Technology to Assist Mitigation of Disasters**

A new UN Outer Space Affairs office (UNOOSA) has opened in Bonn, Germany, as part of a future network dedicated to carrying out the UN Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER). Providing universal access to space-based information to all countries and relevant organizations, UN-SPIDER covers all stages of disaster, including risk reduction. The program will improve disaster management and help developing countries strengthen their institutional capacities. UN-SPIDER offices are also scheduled to open in Beijing and Geneva. [See also *Space Technology for Improving Planetary Knowledge and Security* in April 2006, and other related items in previous environmental security reports.] [November 2007. [Military Implications, Source](#)]

## **Technologies that Could Trigger New Forms of Arms Race**

### **Modern Warfare Increasingly Harmful to the Environment**

#### **Accelerating Synthetic Biology Applications Need Better Monitoring and Regulation**

### **Modern Warfare Increasingly Harmful to the Environment**

War and the environment, an article published by Worldwatch Institute, shows that modern warfare tactics have an increasingly devastating impact on the ecosystems. By thoroughly analyzing the ecological effect of the American war in Vietnam, the Rwandan and Congolese civil wars, and the current war in Iraq, the article illustrates the long-term damage caused by modern “ecocide.” [See also *Addressing Post-Conflict Environmental Security Issues* in August 2006, and other similar items in previous environmental security reports.] [December 2007. [Military Implications, Sources](#)]

### **Accelerating Synthetic Biology Applications Need Better Monitoring and Regulation**

Recently, there were some significant synthetic biology advances, such as the Genome transplant by the J. Craig Venter Institute (transforming one type of bacterium into another by transplanting of donor chromosome into the host), and MIT and Boston University built viruses to combat harmful 'biofilms' (see item 5.2 above). These developments increased the discourse around security issues related to synthetic biology, thus intensifying the regulations debate. International treaties such as the Convention on Biological Diversity might need to be revised in view of the new synthetic biology field. Along the same line, the International Consortium for Polynucleotide Synthesis appeals for improved regulation and surveillance of DNA synthesis products. They propose an oversight framework to improve biosecurity in the gene-synthesis sector, to prevent ill-intentioned individuals from accessing and using such materials. [See also *Futuristic Nanotech and Synthetic Bioweapons Regulation* in November 2006 and *ETC Report Warns of the Threat of Synthetic Biology and Calls for Global Regulations* in January 2007 environmental security reports.] [July 2007. [Military Implications, Sources](#)]

## **Promising Environmental-friendly Technologies**

[New “Nanohybrid” Plastic Is Stronger and More Biodegradable](#)

[Polymer Dielectric Promises Higher Energy Storage](#)

[Nano-based Solar Cell Material Offers Inexpensive Alternative](#)

[Magnetic Resonance Provides Short-range Power Source](#)

[Silicon Nanocrystals Promise More Efficient Solar Cells](#)

[Synthetic Biology to Produce Hydrocarbon-based Fuels](#)

[Nanotechnology Produces Battery/Capacitor in a Sheet of Paper](#)

[Space-based Solar Power Has Significant Environmental Security Potential](#)

[Reducing Military Footprint with Solar Energy at 30 Cents per Watt](#)

[Energy-free Glow Material](#)

[Dye-sensitized Solar Cells Offer Shorter Energy Payback Time](#)

[Nanotech Lithium-Ion Battery Material Promises 10× Capacity Increase](#)

[New Biological Discovery Should Bring More Efficient Water Treatment](#)

### **New “Nanohybrid” Plastic Is Stronger and More Biodegradable**

A new biodegradable ‘nanohybrid’ plastic that can be engineered to decompose much faster than existing plastics was developed by researchers of Cornell University. The plastic is a modified form of polyhydroxybutyrate (PHB), a promising biodegradable plastic produced from bacteria. The use of PHB has been limited because of its brittleness and unpredictable biodegradation rates. The new material, which is also stronger than the original, contains nanoparticles of clay; its biodegradation rate depends on the amount of clay added. In one case it had almost completely decomposed after seven weeks, while the unmodified version was barely affected. However, bioplastics definition and recycling procedures are yet to be agreed upon and the need for international standards and regulations is increasing as the research and applications expand. [December 2007. [Military Implications, Source](#)]

### **Polymer Dielectric Promises Higher Energy Storage**

North Carolina State Univ. physicist Vivek Ranjan and colleagues have discovered that combining the polymer polyvinylidene fluoride (PVDF) with chlorotrifluoroethylene (CTFE)—another polymer— produces a dielectric material that may allow capacitors to store up to seven times more energy than those currently in use. [July 2007. [Military Implications, Source](#)]

### **Nano-based Solar Cell Material Offers Inexpensive Alternative**

Scientists at New Jersey Institute of Technology's Department of Chemistry and Environmental Sciences have developed an inexpensive polymer solar cell material that can be painted or printed on flexible plastic sheets. The material uses a carbon nanotube complex combined with buckyball fullerenes, and offers a cost advantage over purified silicon. [See also *Biologically Based Dyes Dramatically Lower Solar Cell Costs* in April 2007 and *Photonic Crystal Provides 50% Cost Reduction* in March 2007 environmental security reports.] [July 2007. [Military Implications, Source](#)]

### **Magnetic Resonance Provides Short-range Power Source**

Marin Soljacic of the Massachusetts Institute of Technology has developed a technique for transmitting electric power at usable efficiency over distances of a few meters, using tailored oscillating electric and magnetic fields. Dr. Zhong Lin Wang and colleagues at the Georgia Institute of Technology have succeeded in using nanotechnology to produce an electric generator that can be embedded in the human body and may have the potential, when fully developed, of producing usable amounts of power from such mechanical sources as the pulsation of the arterial system. The combination offers locally produced, locally consumed, and environmentally friendly electricity. [July 2007. [Military Implications, Source](#)]

### **Silicon Nanocrystals Promise More Efficient Solar Cells**

Scientists at the National Renewable Energy Laboratory (NREL), in Golden CO, have shown that silicon nanocrystals can increase the efficiency of conventional solar cells from its present 20% to 40%, at much lower cost than other approaches to high efficiency cells. [See also *Nano-*

*based Solar Cell Material Offers Inexpensive Alternative* in July 2007 and other previous environmental security reports.] [August 2007. [Military Implications, Sources](#)]

### **Synthetic Biology to Produce Hydrocarbon-based Fuels**

LS9, a synthetic biology company based in San Carlos, CA, has genetically engineered various bacteria, including E. coli, to custom-produce hydrocarbons that could be processed into fuel. A pilot plant is planned for 2008, and sales of synthetic biocrudes to refineries for further processing are expected within three to five years. Another company, Amyris Biotechnologies, of Emeryville, CA, is using plant and animal genes to make microbes produce renewable hydrocarbon-based fuels. [August 2007. [Military Implications, Sources](#)]

### **Nanotechnology Produces Battery/Capacitor in a Sheet of Paper**

Scientists from the Rensselaer Polytechnic Institute have developed a device that resembles a sheet of paper in all respects, but that can serve as a battery or capacitor. The material is formed from cellulose and carbon nanotubes, and can be soaked with any of a variety of fluids (including sweat or blood) to serve as an electrolyte. It can operate at temperatures between -100 and +300 degrees Fahrenheit and can be printed like paper. [August 2007. [Military Implications, Sources](#)]

### **Space-based Solar Power Has Significant Environmental Security Potential**

A US National Security Space Office (NSSO) report, *Space-Based Solar Power: As an Opportunity for Strategic Security*, states that Space Based Solar Power (SBSP) can reduce half a trillion dollars a year in military costs by stopping energy-related wars before they start, and that SBSP can be tested in orbit within five years. SBSP has the potential to provide base load electricity on a global basis without producing greenhouse gases or nuclear waste. Geostationary satellites could convert solar energy into electromagnetic beams that are transmitted to receivers around the world that feed local electric grids. The report argues that military leadership in development and demonstration is probably necessary to speed civilian commercialization, as was the case with the Internet. One hundred and seventy academic, scientific, technical, legal, and business experts around the world participated in the study. The Executive Summary of the NSSO report states that, "...perhaps the greatest military benefit of SBSP is to lessen the chances of conflict due to energy scarcity by providing access to a strategically secure energy supply." [October 2007. [Military Implications, Sources](#)]

### **Reducing Military Footprint with Solar Energy at 30 Cents per Watt**

Current solar photovoltaic technology costs about \$3.00 per watt. Nanosolar Inc. has announced that it will lower costs to \$0.30 per watt, commercially available next month. The new production process makes the solar cell sheets 100 times thinner and 100 times faster with solar-absorbing nano-ink that can transfer sunlight into electrical power. [See also *Nano-based Solar Cell Material Offers Inexpensive Alternative* in July 2007 and other similar items in previous environmental security reports.] [November 2007. [Military Implications, Sources](#)]

### **Energy-free Glow Material**

MPK Co. of Clayton, WI has developed a tritium-based material, “Litrosphere”, which produces a low-level glow for more than 12 years without energy input. Trace tritium beta decay in phosphor microspheres provides the energy source. Safety is claimed. It can cover a standard sheet of paper for about 35 cents, comes in a variety of colors, and can take the form of either paint or injection-molded plastic. Its luminous output cannot compete with conventional lighting sources, but it is highly suitable for marking objects that need to be spotted in the dark, saving energy and lowering maintenance requirements. {December 2007. [Military Implications, Source](#)}

### **Dye-sensitized Solar Cells Offer Shorter Energy Payback Time**

It is estimated that conventional photovoltaic solar cells must be in service for around three years before they have produced as much energy as that required to manufacture them. However, the “Grätzel” or “dye-sensitized” solar cell has now gone into large-scale production. This type of device uses a combination of titanium dioxide and an organic dye molecule, often containing ruthenium, which are immersed together in a liquid electrolyte. A Netherlands independent photovoltaic-research firm has estimated that such dye-sensitized cells installed in southern Europe would have as short an energy payback time as six months. G24 Innovations, in Cardiff, Wales, has announced that it expects to be able to make enough dye-sensitized photovoltaic cells each year to provide 30 megawatts of peak generation capacity. Other companies are also pursuing this development. [December 2007. [Military Implications, Source](#)]

### **Nanotech Lithium-Ion Battery Material Promises 10× Capacity Increase**

Stanford University Assistant Professor Yi Cui has developed an electrode material for lithium-ion batteries (used in laptops, iPods, video cameras, and cell phones) that increases their energy storage capacity ten times above current batteries. This could help make future electric cars more attractive. The material uses silicon nanowires to hold the charge-bearing lithium ions. Silicon structures can hold more lithium than the conventional carbon, but tend to disintegrate because of size changes during recharge cycles; the nanowires do not exhibit this characteristic. [December 2007. [Military Implications, Source](#)]

### **New Biological Discovery Should Bring More Efficient Water Treatment**

Scientists at the Environmental Biotechnology Cooperative Research Centre (EBCRC), Eveleigh NSW, Australia, have discovered a cell signaling pathways that can control bacterial slime on membranes, which will lead to more efficient desalination and water recycling plants. According to the project leader, “Membrane fouling is one of the greatest contributors to increased energy usage and cost in the desalination and water recycling processes. Reducing fouling will significantly decrease operating costs through reduced energy consumption, a reduction in chemical usage and an overall reduction in a plant’s environmental footprint”. This signaling system initiates dispersal in established fouling biofilms and prevents the formation of new biofilms. EBCRC is developing a range of biofilm control formulations that will stimulate natural bacterial dispersal events. [October 2007. [Military Implications, Source](#)]



## 1.B Preventing or Responding to Environmentally Caused Conflicts

### SECURITY IMPLICATIONS OF CLIMATE CHANGE

#### International Conferences Put Climate Change among Top Security Issues

Experts and politicians participating at a seminar on climate change held in Ny Alesund, Norway, called climate change the biggest security challenge since the Cold War. British climate change ambassador John Ashton said global warming should be considered a security issue on a par with terrorism, in order to increase global action to cut greenhouse gas emissions from fossil fuels.

“Already seven times more livelihoods are devastated by natural disasters than by war worldwide, at the moment, and this is going to be much worse, the way the climate is developing,” noted Jan Egeland, special adviser on conflict prevention to UN Secretary-General Ban Ki-moon, and former head of UN humanitarian affairs. He underlined again that “those most affected by climate change are the poorest since droughts and flooding will be getting worse.” The Vienna climate change talks organized by the UN Framework Convention on Climate Change this month and attended by about 1,000 politicians, experts, activists, and representatives from the media from over 150 countries give equal importance to adaptation and mitigation. [See also *UN General Assembly 61st Session Pinpoints Global Warming as a Central Issue for Security* in September 2006 and *UK Initiates UN Security Council Debate on Climate Change and Security* in April 2007 environmental security reports] [August 2007. [Military Implications, Sources](#)]

#### IISS’s *Strategic Survey 2007* Warns of Global Security Implications of Climate Change

*Strategic Survey 2007* by the International Institute for Strategic Studies (IISS) is a comprehensive analysis of the world security situation in general and by region. The “Strategy Policy Issues” chapter includes ‘Climate Change: Security Implications and Regional Impacts’ and ‘The Military Use of Space’. The report lists the effects of climate change and nuclear proliferation as being on a par with growing Islamist extremism as the biggest security threats. It warns that “Even if effective measures are adopted, there will still be unavoidable impacts on the environment, economies and human security”; and, unless the right preparedness actions are taken, global security consequences of climate change could be equal in disruption to those of nuclear war. [September 2007. [Military Implications, Sources](#)]

#### GEO-4

UNEP’s fourth *Global Environment Outlook: environment for development* (GEO-4) warns once more that changing temperatures, rapid rates of species’ extinction, and unsustainable depletion of the world’s scarce resources are the most important threats to human survival. The report reiterates that in order to avoid catastrophe, a new proactive policy approach is needed, since environmental problems worsen faster than response policies are presently adopted. An analysis by region shows that in Africa, the biggest problem is caused by land degradation due to unsustainable use and climate change; in Asia and Pacific, despite improvements in many



domains, the environment is further threatened by increasing consumption and associated waste—including hazardous waste; Europe, although a leader in environmental policy, has to make greater efforts to reduce greenhouse gas emissions and change its unsustainable patterns of production and consumption; the Latin America and Caribbean environment is threatened by lack of land-use planning—including urbanization and deforestation, and high income inequality; in North America, high energy consumption and low efficiency, low fuel economy standards, and urban sprawl are the main environmental problems. [October 2007. [Military Implications, Sources](#)]

### ***World in Transition –Climate Change as a Security Risk***

*World in Transition –Climate Change as a Security Risk*, a report by the German Advisory Council on Global Change based on the work of international experts and organizations including the UN Environmental Program (UNEP), assesses the possible security implications of climate change and warns that inaction might lead to destabilization and raise the threats to international security to a new level. It suggests four 'climate-induced conflict constellations': 1) freshwater scarcity, 2) decline in food production, 3) increased natural disasters, and 4) environmentally-induced migration. The geographic areas at greater risk include: northern and southern Africa and the Sahel zone; central Asia, India, Pakistan and Bangladesh, China; Caribbean and the Gulf of Mexico (especially Central America); and Andean and Amazonian regions of Latin America. The report makes extensive recommendations, including: shaping global political change, reforming the UN, developing pro-active climate protection and adaptation policies, and “financing international conflict prevention.” It also underlines the need to develop strategies for avoiding destabilization and conflict in the event that climate protection fails. [December 2007. [Military Implications, Sources](#)]

### ***Six places in the world where climate change could cause political turmoil***

A Christian Science Monitor article, *Six places in the world where climate change could cause political turmoil* gives another view of areas vulnerable to consequences of global warming: 1) Nepal (lack of freshwater due to melting glaciers causes migration and increased power of Maoists); 2) Indonesia (deforestation); 3) Lagos, Nigeria (sea-level rise in an overpopulated and unstable region); 4) U.S. (overstretched America's armed forces due to disaster relief and war-fighting); 5) Arctic (race for natural resources and navigation change sovereignty questions as Arctic ice melts); 6) East Africa (desertification and decreased food production induced migration). [December 2007. [Military Implications, Sources](#)]

### ***Climate Change: A New Threat to Middle East Security***

The *Climate Change: A New Threat to Middle East Security* report by Friends of the Earth Middle East (FoEME) highlights that consequences of climate change—mainly rising sea levels and freshwater shortage could exacerbate security risks in the Middle East. Unless adequate adaptation actions, the large-scale consequences include threat to “national, regional, and global security” warns Nader Khatib, Palestinian Director of FoEME. [December 2007. [Military Implications, Sources](#)]

## Arctic Debate

### Arctic Access, Territorial Claims, Energy Resources and Environmental Management

Global warming is expected to increase access to the Northwest Passage and other Arctic areas. Canada announced the construction of up to eight Polar Class 5 Arctic Offshore Patrol Ships and the establishment of a deep-water port in the far North. A Canadian opposition party and some Canadian analysts say Canada should do much more to assure its sovereignty over the area. The status of some Canadian Arctic waters is not clear among the relevant neighboring countries with varying territorial claims in the Arctic. Russia planted its flag on the seabed 4.2 km below the North Pole to strengthen its claims over a large Arctic area. [See also *The Disputes over the Northern Territories Set to Continue* in June 2007, *New Canadian Strategies for Monitoring the Northwest Passage* in August 2006, and *Arctic Northern Passage Opens New International Issues of Regulation* in February 2006 environmental security reports.] [July 2007. [Military Implications, Sources](#)]

### Arctic Debate Intensifies

Debate over the Arctic ownership is intensifying, as Canada, Denmark, Norway, Russia and the U.S. are all building their political and legal cases to claim jurisdiction over different (sometimes overlapping) areas. Russia declared that the first results show that the Lomonosov Ridge is an extension of Siberia, thus backing the country's bid to take control of the region. Denmark sent scientists on a month-long expedition seeking evidence that the Lomonosov Ridge is a geological extension of Greenland. Canada is determined to defend its sovereignty over the region's Northwest Passage and some Arctic territory; "We either use it or lose it. And make no mistake, this government intends to use it," said Canadian Prime Minister Stephen Harper. Canada is establishing an army training center at Resolute Bay (about 370 miles south of the North Pole) and a deepwater port on the north end of Baffin Island. "The Russians, Canadians and Danes all have overlapping claims in the polar region. It is unclear how this can be resolved," said Øystein Jensen, a maritime law expert with Oslo's Fridtjof Nansen Institute. [August 2007. [Military Implications, Sources](#)]

### Canada to Begin Monitoring Traffic in Northwest Passage by mid-2008

In view of increasing disputes over the Northwest Passage, Canada announced that it will begin monitoring the area's sea traffic by underwater listening devices. Beginning in mid-2008, Canada's military will monitor ships and submarines using detection technology installed at Gascoyne Inlet on Devon Island, near one of the main arteries of the passage. Canada is at odds with Russia, Denmark, Norway and the United States over the Northwest Passage. [September 2007. [Military Implications, Sources](#)]

## Disputes over Polar Regions Expands

The race for claiming polar territories expands from the Arctic to Antarctica. The Antarctic should be protected by the 1959 Antarctic Treaty and related agreements that protect the continent against activities relating to mineral resources except scientific ones. Nonetheless, Britain's Foreign Office plans to claim 1 million sq km (386,000 sq miles) of seabed off the coast of the British Antarctic Territory. Greenpeace and WWF warned that Britain's possible oil, gas, and mineral exploration in the region would represent an environmental disaster for the fragile

ecosystem. Similar claims for seabed areas might also be submitted by Chile and Argentina, which might overlap some of the British territorial claims.

Meantime, the Arctic disputes continue. Encouraged by the prospect of increased oil and minerals access due to global warming, Greenland is contemplating eventual independence from Denmark. Warning that climate change is becoming a threat to worldwide peace and security, German Foreign Minister Frank-Walter Steinmeier noted with concern that the rival territorial claims in the Arctic could turn into a Cold War. “Policies to fight climate change can, and will, become an important part of peace policies,” he added. Note: On August 21st this year, for the first time on record, the Northwest Passage was opened to ships not accompanied by or armored as icebreakers. [See also *Arctic Debate Intensifies* in August 2007, *Arctic Access, Territorial Claims, Energy Resources and Environmental Management* in July 2007, and other similar items in previous environmental security reports] [October 2007. [Military Implications, Sources](#)]

## **MIGRATION TRIGGERED BY ENVIRONMENTAL CAUSES**

### **New Strategies Needed to Deal with Global Displacement and Migration**

The annual meeting of the UN High Commission for Refugees (UNHCR) governing Executive Committee concluded that new strategies are needed to deal with increasing global displacement and migration, as well as approaches to tackle their causes, scale, and complexity. In addition to conflict and persecution, environmental degradation, and frequency and magnitude of natural disasters, are among the main causes of increased numbers of refugees. After several years of decline, in 2006 the number of refugees began rising again and continues to mount, remarks UNHCR. The difference between categories of migrants is increasingly blurry. “War is many times driven by scarcity of resources; scarcity of resources can be driven by climate change,” said UN High Commissioner for Refugees, António Guterres. Note: A study by Rafael Reuveny from Indiana University, *Climate Change-induced Migration and Violent Conflict*, reveals that of 38 cases of migration directly attributable to climate change during the 20th century, half led to conflicts, some of which were violent. [See also *Climate Change Refugees* in May 2007, *UNU Calls for International Framework for Environmental Refugees* in October 2005, and other similar items in previous environmental security reports.] [October 2007. [Military Implications, Sources](#)]

### **Desertification Triggering Migration**

Increasing desertification of West Africa is forcing people to relocate, causing more conflict among communities. The executive director of UNEP warned that Africa's next major war might be over water, giving Burkina Faso as an example. The Conference of the Parties to the United Nations Convention to Combat Desertification (UNCCD COP8) noted that desertification affects more than 250 million people, and 1 billion more are at risk, and asked for increased and swift action. The Global Humanitarian Forum, to be launched on October 17, 2007, is being set up by former UN Secretary General, Kofi Annan, to address in a preventive and proactive way global refugee movements and humanitarian crises triggered mainly by climate change. Climate change is, “perhaps the single most important humanitarian challenge of years to come,” says Kofi Annan. The forum will act as a catalyst among the different interest groups involved in

international disaster relief and prevention: governments, aid agencies, the military, the business world and academics. [September 2007. [Military Implication, Sources](#)]

## **RIISING SEA LEVELS**

### **Scientific evidences and possible consequences**

During the recent meeting at the UN Open-ended Informal Consultation Process on Oceans and the Law of the Sea, Indonesia said it has lost 26 islands to climate change.

A team of scientists from the University of Colorado-Boulder's Institute of Arctic and Alpine Research, INSTAAR, and the Russian Academy of Sciences estimates that by 2100 accelerating melt of glaciers and ice caps could cause 0.1–0.25m (4–9.5 inches) additional sea level rise. This rise might be doubled if the expansion of ocean water warming is factored in. [July 2007. [Military Implication, Sources](#)]

The coastline along the Pearl River Delta—China’s most economically dynamic region—is expected to be the worst hit by rising sea levels by 2050. Egypt is facing similar worries as rising waters of the Nile Delta threaten millions of people and Egypt's food supply. [August 2007. [Military Implication, Sources](#)]

At recent UN meetings, low-lying states reiterated their call for increased action against global warming. The small island-state of Tuvalu could disappear in 30 to 50 years. Increased salinity and flooding could displace millions in Bangladesh. [September 2007. [Military Implication, Sources](#)]

Bangkok, Thailand's sprawling capital of more than 10 million people might be submerged within the next 15 to 20 years, due to sinking ground and the seawater rising, warn experts. Bangkok is one of 13 of the world’s 20 largest cities at risk of being swamped as sea levels rise in coming decades, according to the Intergovernmental Panel on Climate Change. [October 2007. [Military Implication, Sources](#)]

Rising sea levels, increasingly destructive and more frequent storms, erosion, and floods will cause some areas of Britain to sink into the sea over the next 30 years, warn some experts. It seems that some parts of the Norfolk and Suffolk coastline could not be saved, according to leaked findings of a study conducted by the UK Environment Agency and to be published in June 2008. A Department for Environment, Food and Rural Affairs spokesman said, “Spending on flood and coastal erosion risk management has nearly doubled in cash terms, from £307 million in 1996-97 to an estimated £600 million in 2007-08. The Government will further increase spending to £800 million in 2010-11.”

Erosion, flooding and permafrost thawing are also menacing some Alaskan areas and peoples' livelihood. On the island of Kivalina, uncertainty and frustration raise tension among the 400 residents whose relocation is yet to be decided. [November 2007. [Military Implication, Sources](#)]

WMO reports that global averaged sea-level in 2007 is estimated about 20 cm higher than the 1870 estimate. Satellite measurements show that, since 1993, global averaged sea-level has been

rising at about 3 mm per year, considerably more than the 20th century average of about 1.7 mm per year.

At the Bali Climate Change Conference, small island states reiterated the catastrophic impacts that global warming and rising sea levels could have for their nations and called for swift action to reduce man-made causes and increase adaptation measures.

According to U.S. government reports, more than 180 Alaskan villages are in danger because of shoreline erosion and permafrost melting due to global warming. Some are in immediate need of moving, although there are no clear relocation plans, nor adequate funding.

The *Climate Change: A New Threat to Middle East Security* report by Friends of the Earth Middle East (FoEME) highlights that consequences of climate change—mainly rising sea levels and freshwater shortage could exacerbate security risks in the Middle East. Unless adequate adaptation actions, the large-scale consequences include threat to “national, regional, and global security” warns Nader Khatib, Palestinian Director of FoEME. [December 2007.

[Military Implication, Sources](#)]

## **MELTING SEA ICE AND GLACCIERS**

### **Scientific evidences and possible consequences**

Ice caps and glaciers contribute 60% of the ice melting that is one cause of increasing sea levels. According to scientists from the University of Colorado-Boulder's Institute of Arctic and Alpine Research, INSTAAR, and the Russian Academy of Sciences, the rate has been accelerating over the past decade and 28% of this comes from Greenland, and 12% from Antarctica.

In the Andes, many of the lower glaciers might be gone over the next decade or so, raising concerns over water and power supplies, and thus affecting economic development and the fight against poverty in the region—mainly in Peru.

Scientists observing the modifications in Greenland are also warning of fast paced melting and increasing temperatures in the region. Arctic climatologist Konrad Steffen who spent the past 18 springs on the Greenland ice cap, noted that over the last decade, the average winter temperature rose by 7°F, and cracks and ice quakes are more frequent, as if Greenland is “coming apart.” The Greenland Climate Network established by Steffen serves climate scientists worldwide and is one of the main instruments used by scientists from 60 nations participating in interdisciplinary research focusing on the Polar Regions, during the International Polar Year.

The Chinese Academy of Sciences reports that the Qinghai-Tibetan plateau is warming at 0.7°F a decade, and that the 18,000 square mile area covered by glaciers has shrunk by 30% over the past decades, threatening to dry up the Yellow River and thus causing more droughts, sandstorms and desertification. The Chinese government already had to relocate some of the local population. [July 2007. [Military Implication, Sources](#)]

Arctic sea ice shrank to the lowest extent ever recorded by satellite, and it might be close to reaching a “critical threshold”—which could mean that the region might be ice-free in summer in the next 10 to 20 years. The Tibet Meteorological Bureau reported accelerating melting due to rising annual temperatures at a rate of 0.3° Celsius (0.54° Fahrenheit) every 10 years. [August 2007. [Military Implication, Sources](#)]



This year, the area covered by sea ice in the Arctic shrank to its lowest level since satellite measurements began nearly 30 years ago. The U.S. National Snow and Ice Data Center noted that on Sept. 16, 2007, the Arctic sea ice reached a record low 4.13 million square kilometers (1.59 million square miles), 22% less than the previous record. Himalayan glaciers are melting fast in Indian Kashmir as a result of global warming, noted a report by ActionAid, *On the Brink?* Himalayan glaciers are the main source for Asia's nine largest rivers; water levels of regional streams and rivers already dropped by two-thirds. Rajendra K. Pachauri, the Chair of the UN Intergovernmental Panel on Climate Change, warned that some one billion people could be threatened by water shortage in South Asia, China and Africa as result of melting glaciers. [September 2007. [Military Implication, Sources](#)]

Many studies are showing greater warming in the Arctic than in the rest of the world and that the reduction in the sea ice extent has been much faster than global climate models predict. Douglas Bancroft, Director of the Canadian Ice Service, notes that the "overall extent was similar to what some of the models envisioned but decades in advance of when they expected that would occur. In fact, the summer of 2007 looked very similar to some climate model forecasts for 2030 to 2050." One research station in the Canadian High Arctic recorded temperatures as high as 22°C on Melville Island, where the long-term average is 5°C. According to Walt Meir of the US National Snow and Ice Data Center in Colorado, the wider polar region may have experienced its hottest summer on record.

ESA's Earth Explorer ice mission, CryoSat-2, to be launched in 2009, will be specifically designated for polar region research, with observations over three-years, providing conclusive data on the rates at which ice cover is diminishing. To complement submarine and satellite measurements and determine with highest accuracy how rapidly Arctic ice is thinning, next year three British polar explorers will chart sea ice melt to better estimate when Arctic summer sea ice will vanish due to global warming. [October 2007. [Military Implication, Sources](#)]

Rapid melting of Andes glaciers indicates that they might disappear by mid-century, threatening agriculture, drinking water sources, and hydroelectric plants. The livelihood of more than 11 million people living in growing cities of Bolivia, Ecuador, and Colombia is jeopardized. As some of the poorest countries of Latin America, they do not have the funds necessary for preparedness and for developing adequate infrastructure to cope with water scarcity and other related challenges. [November 2007. [Military Implication, Sources](#)]

Scientists attending the American Geophysical Union meeting in San Francisco revealed that ice sheets melt faster than expected. The Arctic ice is shrinking and thinning at a much faster pace than expected and latest modeling studies indicate that the northern polar waters could be ice-free in summers within just 5-6 years. Similarly, the Greenland ice sheet melted at a record rate this year, the largest ever since satellite measurements began in 1979.

Scientists observed that over the past few years the speed at which some of Greenland's glaciers flow towards the sea has doubled. They think that one factor might be the holes created in the ice due to warming, through which the water of melting surface ice is penetrating below the ice and thus speeding the flow of ice toward the open ocean. While Greenland's melt water presently increases global sea level by about a quarter of an inch per decade, an accelerated melt would seriously endanger world's shorelines. [December 2007. [Military Implication, Sources](#)]

## FOOD AND FRESHWATER

### Food Security

UN Food and Agriculture Organization warns that world food supply is diminishing rapidly and food prices reached historic highs, increasing the “very serious risk that fewer people will be able to get food,” particularly in the developing world. FAO records show that world grain stock—corresponding to the world’s total consumption—declined to 12 weeks for wheat and only 8 weeks for corn. Population growth, the effects of global warming and increase of biofuels industry are among the main factors. Josette Sheeran, executive director of the World Food Program expressed concerns that we are “facing the perfect storm for the world’s hungry.”

New computer projections also warn of possible future crop production reduction due to climate change. NOAA models show the effects that climate changes could have on the tropical belt and the possible consequences to ecosystems and human settlements. New projections by the Massachusetts Institute of Technology indicate that unless there are serious emission cuts, ozone pollution might increase 50% by 2100, which could result in a decrease of global economic value of crop production by 10% to 12%. Nevertheless, the present situation shows that changes are happening faster than computer-based climate simulations have forecast.

Three studies coauthored by researchers from prestigious organizations in North America, Europe and Australia, published by the National Academy of Sciences, warn that the future food situation might be worse than presently estimated, since many parameters that would influence crops were not efficiently factored in. “Many people assume that we will never have a problem with food production on a global scale. But there is a strong potential for negative surprises,” said Francesco Tubiello, a physicist and agricultural expert at NASA's Goddard Institute of Space Studies, who coauthored all three studies. [December 2007. [Military Implication, Sources](#)]

### EC Proposal for Water Pricing

The European Commission released a green paper proposing a water framework directive to deal with possible future water scarcity and assure sustainable water use in Europe. Feedback on specific proposals for pricing water on the “user pays” principle is expected from both the European Council and the Parliament. The EC warns that water shortage and drought might become the norm in Europe by 2070. [July 2007. [Military Implications, Sources](#)]

## NATURAL DISASTERS

### Scientific evidences and possible consequences

The newly established Centre for Climate Change Adaptation in Australia developed a model to study coastal vulnerability to climate change.

Climate modelers from the Hadley Centre for Climate Prediction and Research in Exeter, UK, show that by 2015 the average global temperature will be 0.5°C above the average value for the last 30 years, and that between 2009 and 2015, half of the years will be warmer than the current warmest year on record.

The NASA Goddard Institute for Space Studies has developed the first climate model that can estimate the effect of atmospheric warming on the strength of storms. [August 2007. [Military Implication, Sources](#)]



Between 2004 and 2006, the number of emergencies due to natural disasters doubled, from 200 to 400. This year's monsoon affected an estimated 30 million in South Asia, and millions of Africans were also affected by flooding throughout the continent. Scientists expect increased natural disasters over the next decades and researchers warn that risks of flooding might be underestimated. [August 2007. [Military Implication, Sources](#)]

In Africa, the worst rains in 30 years caused flooding affecting an estimated 1.5 million people in 22 countries, including Ethiopia, Niger and Sudan, increasing the humanitarian crisis, reports the UN Office for the Coordination of Humanitarian Affairs (OCHA). Hundreds of thousands of people have been displaced and the risks of epidemics are rising. In other parts of the world, strong hurricanes also produced serious damages during September. [September 2007. [Military Implication, Sources](#)]

The International Federation of Red Cross and Red Crescent Societies have stated that more than 250 million people a year are now affected by so-called natural catastrophes, a third more than ten years ago. The federation has already responded to more than 100 floods in 2007; in 2006, the humanitarian groups responded to 482 disasters, up from 278 in 2004.

Climate change is cited as one of the causes that led to 60% of Georgian farmers losing all of their crops. Australia's first bush fires also triggered fears over the intensifying effects of climate change. By 2030, the already dry continent might get warmer by about 1.8 degrees Fahrenheit, and drier due to estimated 3% annual rainfall reduction, forecasts the *Climate Change in Australia* report produced by the Commonwealth Scientific and Industrial Research Organization and the Bureau of Meteorology. Note: a survey of 1,213 people conducted in July showed that 40% of Australians consider global warming a greater threat to security than Islamic fundamentalism; only 20% deemed it less. In Southern Africa, environmental degradation and global warming change rainfall patterns, decreasing in some regions—thus causing drought, and increasing in others, which might produce floods, warned scientists attending the Southern Africa Development Community meeting at mid-September. They also discussed adaptation strategies. [October 2007. [Military Implication, Sources](#)]

The number of weather-related disasters worldwide now averages 400–500 a year, compared to 125 in the early 1980s, and the world should increase mitigation and preparedness efforts, notes Oxfam report Climate Alarm Disasters increase as climate change bites. Geological disasters—such as earthquakes, are about the same, indicating that global warming is to blame, remarks the report. Factoring in population growth, the number of people affected also rises considerably. As of August 2007, some 248 million people were affected by flooding in 11 Asian countries alone. The November cyclone Sidr claimed another estimated 10,000 human lives and left about 3 million homeless in Bangladesh. [November 2007. [Military Implication, Sources](#)]

Summarizing the notable climate events of 2007, the World Meteorological Organization (WMO) remarks on devastating floods; drought and falling freshwater reserves; intense storms in various places around the world; and record-low Arctic sea ice extent that opened the Canadian Northwest Passage for the first time. It reports that the decade of 1998-2007 is the warmest on record, with the global mean surface temperature for 2007 estimated at 0.41°C (0.74°F) above the 1961-1990 annual average of 14°C (57.20°F). Extreme temperatures included unusually cold winters in South America, heat waves affecting Europe, and making 2007 probably the hottest year on record in the Northern Hemisphere. Some scientists believe that weird weather patterns

might become the norm and that the world is more than 50% likely to experience serious climate change as it is unlikely to keep greenhouse gases levels low enough to avoid the critical 2°C (3.6°F) temperature rise. [December 2007. [Military Implication, Sources](#)]

## ADAPTATION

### Adaptation Needs and Actions

Tackling climate change in the next quarter-century will require major changes to patterns of investment and financial flows, according to the report *Investment and financial flows relevant to the development of effective and appropriate international response to Climate Change* by the UN Framework Convention on Climate Change. [August 2007. [Military Implication, Sources](#)]

The 2007 droughts in parts of southern Africa reduced maize production by about 40% to 60%. A workshop of over 140 experts on Adaptation Planning and Strategies organized by the UNFCCC and FAO in Rome underlined the long-term implications of abnormal changes in air temperature and rainfall and the increasing frequency and intensity of drought and floods, mainly on the developing nations. Due to the melting of Himalayan glaciers, the Pakistani government established a high-level committee and a study center to study adaptation strategies, including developing efficient water management systems, raising mass awareness campaigns, and changing cropping patterns. [September 2007. [Military Implication, Sources](#)]

Asia, being one of the continents most affected by climate change, is increasing its efforts for adaptation and disaster management. The UN University launched a 14-week pilot program to help Asian countries in flood risk assessment and planning for and managing floods. A Japanese initiative using satellite data to provide disaster information in Asia could extend its coverage to other developing countries. The Sentinel Asia project, a Japanese initiative using satellite data to provide disaster information in Asia will be expanded to cover more end users in Asia and could be extended to other developing countries in Africa and Latin America. China also offers its expertise and technology for disaster forecasting and management to other developing countries. [October 2007. [Military Implication, Sources](#)]

The *Fourth Assessment Report (AR4) Summary for Policymakers* by the International Panel for Climate Change is a comprehensive scientific assessment of world climate, dedicated to support and encourage policy negotiations and action. It states with “very high confidence” that post-industrial human activities have warming effects, and with “high confidence” that although the impact of global warming may be “abrupt and irreversible”, adequate adaptation and mitigation policies “can significantly reduce the risks of climate change.” It projects that in 2090-2099 relative to 1980-1999, temperature rise could range between 0.3°C and 6.4°C, and sea level rise up to 0.59m—not including important factors such as changes in ice flow. The regions most affected by climate change are the Arctic, Africa, the small islands, and the highly populated Asian and African megadeltas.

The Synthesis Report addresses: 1. Observed changes in climate and their effects (highlighting observations of increases in global temperatures, melting of snow and ice, rising sea level, and health implications); 2. Causes of change (the likely role of anthropogenic

warming); 3. Projected climate change and its impacts (different near and long term scenarios depending on climate policies, and examples of some impacts on systems, sectors, and regions) 4. Adaptation and mitigation options (with examples for several sectors of adaptation option/strategy, policies and measures, technologies, constraints and opportunities); and 5. Long-term perspective (key vulnerabilities, risks and threats, as well as scientific and socio-economic aspects relevant to adaptation and mitigation).

The report underlines that “A wide variety of policies and instruments are available to governments to create the incentives for mitigation action. Their applicability depends on national circumstances and sectoral context.” The *AR4* was released in Valencia, Spain, on November 17, 2007 and the key findings will be discussed at the December UN Climate Change Conference in Bali. [November 2007. [Military Implication, Sources](#)]

Change in cultivation patterns due to climate change, population growth, increasing oil prices, expansion of biofuels, instability of financial markets, and other economic factors highly affect agricultural commodity prices. Large price fluctuations of agricultural products can have a destabilizing effect on countries’ economies, hindering poverty reduction efforts, potentially even leading to civil rebellion and political instability. The IPCC estimates that in some African countries, yields from rain-fed agriculture would be reduced by 50% due to climate change. According to the UN Food and Agriculture Organization (FAO) *Food Outlook* report, prices are rising considerably for nearly all major food and feed commodities. Another FAO report, *The State of Food and Agriculture 2007*, presents a comprehensive assessment of the world’s food situation, including projections up to 2050. ‘Part II - World and Regional Review: a longer term perspective’ highlights the challenges posed to food security by population growth, rapid economic development, increasing demand for biofuels, and climate change. However, FAO’s projections are optimistic, estimating the number of well-nourished people in developing countries to rise from 3.9 billion in 1999–2001 (83% of the population) to 6.2 billion (93%) in 2030, and to 7.2 billion (96%) by 2050. [November 2007. [Military Implication, Sources](#)]

“It is now recognized that mitigation alone is unlikely to fully address, in a reasonable time, the challenges that human-induced climate change is likely to bring and that, therefore, much greater attention needs to be given to adaptation to climate change,” said WMO Secretary-General Michel Jarraud, addressing the UN Climate Change Conference in Bali, Indonesia.

Small island states called for help with adaptation programs. Grenada mentioned that the two devastating hurricanes over the last seven years caused damage that amounted to 200% of the country’s GDP. Maldives is spending considerable sums on adaptation efforts, which include building 14 ‘safe islands.’

The Bali roadmap includes, as key issues for the upcoming negotiations, taking action to adapt to the negative consequences of climate change—such as droughts and floods; developing ways to reduce greenhouse gas emissions; finding ways to deploy climate-friendly technology; and financing adaptation and mitigation measures.

At the "Emergency Preparedness and Response Workshop" organized by the UN Office for the Coordination of Humanitarian Affairs (OCHA) in Johannesburg, eight South African and Indian Ocean nations—the Comoros, Madagascar, Malawi, Mozambique, Namibia, Zambia, Zimbabwe and South Africa—decided to enhance regional cooperation for emergency response in case of natural disasters. The draft Declaration of Intent stipulates cooperation for improved

information sharing, establishing regional rapid response teams, and developing measures for free movement of emergency personnel and relief materials in the region.

The first international symposium on public weather services, organized by the WMO has brought together about 120 experts to prepare a road map for improving communities' protection from natural disasters and adaptation to climate change. The discussions covered issues from weather information gathering and dissemination by national meteorological and hydrological services, to use of weather forecasts and reaction in case of emergencies. The symposium was held in Geneva, 3- 5 December 2007.

The UN International Telecommunications Union three-day global forum on "Effective Use of Telecommunications/ICT for Disaster Management: Saving Lives" held in Geneva, launched the ITU Framework for Cooperation in Emergencies (IFCE), which outlines actions helping government and relief agencies to improve disaster preparedness, early warning, and response by using telecommunications resources.

The Convention on Biological Diversity, launched a new adaptation website <http://adaptation.cbd.int> to help governments and agencies to include biodiversity considerations in their adaptation planning. [December 2007. [Military Implication, Sources](#)]

### **EU Climate Change Policy**

The European Commission launched a six-month public debate on approaches for adapting to climate change. Citizens, Parliaments, Member States and international partners will contribute views along the lines set by the Green Paper "Adapting to Climate Change in Europe - Options for EU Action" launched in June 2007 [see last month's report item on Climate Change]. The results, available at the beginning of 2008, will be considered in policymaking and setting priorities for developing a EU adaptation strategy by the end of 2008.

Meantime, UK Foreign Secretary, David Miliband, listed climate change among the UK Foreign Office's ten 'strategic priorities', on a par with consequences of extremism, radicalization, and conflict. He noted that climate change might become the "new raison d'être" for the EU, as "one of the greatest threats to our future prosperity and security... Creating an Environmental Union is as big a challenge in the 21<sup>st</sup> century as peace in Europe was in the 1950s" he said. [July 2007. [Military Implications, Sources](#)]

### **Asia-Pacific to Increase Responses to Climate Change**

Anticipating that Asia and the Pacific could be one of the regions most severely affected by climate change, a two-day meeting organized by the UN and other international agencies focused on identifying strategies, business models, and financial frameworks to reduce the impact of climate changes and promote clean energy while pursuing economic growth. Recommendations were made by government policymakers, business leaders, academics, and representatives of NGOs from across the region. Meanwhile, Australia's opposition Labor Party announced that it would give its poorer neighbors \$US132 million to address impacts of climate change. [July 2007. [Military Implications, Sources](#)]

### **U.S. Climate Change Science Program Progress Assessment**

*Evaluating Progress of the U.S. Climate Change Science Program: Methods and Preliminary Results* by the National Research Council acknowledges advancements made by the CCSP in

documenting and understanding global changes, but finds that more work is needed concerning regional impacts, human vulnerabilities, and mitigation and adaptation options, as well as improving communication with stakeholders and decision makers at all levels. Lack of adequate high-quality data from satellites—crucial to the advancement of climate change science—is identified as the single greatest threat to the future success of CCSP. [September 2007. [Military Implications, Source](#)]

## ENERGY SECURITY

### Trends of Energy Use in IEA Countries

The International Energy Agency's *Energy Use in the New Millennium: Trends in IEA Countries* is an analysis of trends in energy use and efficiency, as well as CO<sub>2</sub> emissions in IEA countries. It concludes that the rate of energy efficiency improvement is too slow compared to increasing energy demands and it should at least double for a sustainable energy future and reduced impact on climate change. Rich in indicators on current energy use and CO<sub>2</sub> emission patterns, the report is a good tool for policymakers for setting priorities for future actions. [September 2007. [Military Implications, Source](#)]

## 1.C Protecting the Environment Due to Its Inherent Moral Value

### ENVIRONMENTAL SECURITY-RELATED INTERNATIONAL REGULATIONS THAT HAVE BEEN OR ARE CLOSE TO COMING INTO FORCE SINCE JULY 2007

#### EC's WEEE Directive Goes into Effect in UK in July 2007

The European Commission's Waste Electrical and Electronic Equipment (WEEE) Directive entered into effect in the United Kingdom on July 1, 2007, after having been effective in the rest of Europe since August 2005. The WEEE Directive is a framework concerning electrical and electronic appliances disposal in order to minimize impacts of this kind of waste on the environment. Among other stipulations, the directive requires that all such devices manufactured in the EU bear a label requiring mandatory recycling. [See also *E-waste Management Directive Came into Effect on August 13, 2005* in August 2005 environmental security report] [July 2007. [Military Implications, Sources](#)]

#### EU Waste Shipment Legislation Came into Force in July 2007

The EU legislation on transboundary shipments of waste adopted in 2006 came into effect July 12, 2007. The regulation establishes a legal framework to ensure that waste is properly handled from the time it is shipped to the time it is disposed of or recovered at destination, and bans the export and/or disposal of hazardous waste to certain countries. The new law replaces the 1993 waste shipment regulation, stipulating a more clear and simplified framework, as well as more severe enforcement measures. [See also *EU to Increase Environmental Regulations Enforcement* in October 2006, *Toxic Waste Disposal of Global Growing Concern* in September 2006, and other related items in previous environmental security reports.] [July 2007. [Military Implications, Sources](#)]

#### Micronesian Nations Sign Coral Reef Protection Document

The presidents of Palau, Micronesia, and the Marshall Islands became the first heads of state to sign the International Declaration of Reef Rights, created by the Reef Check Foundation to raise awareness about the value of coral reefs and how to protect them. 2008 is the International Year of the Reef. [September 2007. [Military Implications, Sources](#)]

#### UN General Assembly Adopts Global Forest Agreement

The “Non-Legally Binding Instrument on All Types of Forests” adopted by the UN General Assembly on December 17, 2007 sets the political framework and standards for sustainable forest management and monitoring to stabilize climate change and protect biodiversity and ecosystems. The agreement suggests mechanisms for systematic monitoring and reporting at the national level, as well as means for international collaboration, ranging from funding developing countries for reducing deforestation, to technology transfer and capacity building for forest management. Although not binding, the forests agreement is an important political instrument to improve nations’ forest management. [See also *United Nations Agreement to Protect the World’s Forests Adopted* in May 2007 environmental security report] [December 2007. [Military Implications, Sources](#)]



## PROPOSED TREATIES AND/OR CHANGES TO EXISTING ONES

### Waste Management

#### **EU Preparing New Directives on Waste Management and Water Quality**

The EU Environment Council reached political agreement on revising the EU's waste legislation—combining three existing laws: the Waste Framework Directive, the Hazardous Waste Directive, and the Waste Oils Directive into a more clear but comprehensive new Directive—and on managing water quality by improving standards and control systems and limiting pollution from hazardous substances. [July 2007. [Military Implications, Source](#)]

### Chemical, Biological, and Nuclear Safety

#### **IAEA to Upgrade International Nuclear Event Scale**

The International Atomic Energy Agency (IAEA) will upgrade the International Nuclear Event Scale (INES) system to enhance international safety by promptly informing the public on the scale of a nuclear or radiological incident. The improvements will make the system more versatile and informative, the terminology will be standardized, and issues related to sources and transportation of radioactive material will be better addressed. The INES was originally developed in the 1990s by the UN IAEA and the Nuclear Energy Agency of the OECD to consistently communicate the severity of reported nuclear and radiological events, with a scale ranging from 1 (anomaly) to 7 (major accident). The updated scale is expected to be issued at the end of 2008, after being reviewed by INES members. [September 2007. [Military Implications, Sources](#)]

#### **Progress on the Nuclear-Test-Ban Treaty**

The 5th Conference on Facilitating the Entry into Force of the Comprehensive Nuclear-Test-Ban Treaty applauded progress made by the Treaty's Preparatory Commission in preparing to establish the future CTBT Organization and the Treaty's verification regime. It also called on the ten states of Annex 2 whose ratification is essential for the treaty's entry into force to do so. These countries are China, U.S., Democratic People's Republic of Korea, India, Pakistan, Egypt, Israel, Indonesia, Iran and Colombia. [See also *Call for Comprehensive Nuclear-Test-Ban Treaty Entry into Force* in September 2004 and other related items in previous environmental security reports.] [September 2007. [Military Implications, Sources](#)]

### **Nuclear Disarmament**

'The Challenge of Abolishing Nuclear Weapons' conference discussed a variety of measures to eliminate the threat of nuclear weapons. Emphasis was on a Nuclear Weapons Convention, a draft of which (created by civil society organizations) was already submitted to the UN by Costa Rica. Along the same lines, nuclear experts attending the Pugwash 50th Anniversary workshop 'Revitalizing Nuclear Disarmament' discussed actions that both nuclear and non-nuclear states



should take in order to further the goal of declaring nuclear weapons illegal and eliminating them entirely. [September 2007. [Military Implications, Sources](#)]

### **IAEA Director's Recommendations to Improve Nuclear Safety**

At the IAEA's 51st annual General Conference held in Vienna, Director General Mohamed ElBaradei called on all countries to ratify the Amendment on the Physical Protection of Nuclear Material of the International Convention on the Suppression of Acts of Nuclear Terrorism, to strengthen the protection of nuclear materials and increase nuclear security. In the meantime, experts attending the scientific forum convened by the IAEA's 'Global Challenges and the Development of Atomic Energy: The Next 25 Years' noted that in view of the world's energy needs' likely to increase by 50% over the next 25 years, nuclear technology is expected to expand, increasing the risks associated with the spread of sensitive nuclear know-how, including enrichment and reprocessing technologies. [See also *Increasing Nuclear Safety and Security* in March 2006 and other related items in previous environmental security reports.] [September 2007. [Military Implications, Sources](#)]

### **International Norms Led by IAEA Are Needed to Stop Smuggling of Nuclear Materials and Nuclear Proliferation**

During a Security for a New Century briefing at the U.S. Capitol, November 27, 2007, David Albright, President of the Institute for Science and International Security said that A.Q. Khan's nuclear smuggling network may be just the tip of an iceberg, and national systems of enforcement are dangerously inadequate. He recommended that the International Atomic Energy Agency lead the creation of new international norms for everything from export controls for nuclear-related materials to a determination of what is classified information about nuclear energy. He also said that corporations should not do business with any trading company unless they can show that the end user could not contribute to nuclear proliferation. Financial loss due to discovery that their materials ended up in illegal nuclear programs will be higher than the financial loss from not selling the products.

In a related development, Edit Herczog, Member of the European Parliament, declared at NATO's November 23, 2007 Advanced Research Workshop held in Budapest on "Energy and Environmental Challenges to Security" that the EURATOM treaty may need a new focus on such security issues as non-proliferation and radiation protection. The EURATOM treaty has never been amended since its establishment 50 years ago. [See also *Nuclear Safety in September 2007, Increasing Nuclear Safety and Security* in March 2006 and other related items in previous environmental security reports.] [November 2007. [Military Implications, Sources](#)]

### **Reports Addressing Nuclear Safety**

*Nuclear Security Report 2007*; Measures to Protect Against Nuclear Terrorism outlines concerns and strategies to consider in order to improve international nuclear security, mainly based on international collaboration. *Securing the Bomb 2007*, commissioned by the Nuclear Threat Initiative, provides a comprehensive assessment of vulnerable nuclear stockpiles around the world and makes recommendations for reducing the nuclear terrorism threat, including establishing a database with unclassified information on actual nuclear incidents. IAEA *Illicit Trafficking Database* reveals that in the period 1993–2006, the agency confirmed 275 cases of

illicit possession and connected activities involving nuclear materials and radioactive sources. [September 2007. [Military Implications, Sources](#)]

### **Progress for Enforcing Biological Weapons Convention**

This year's meeting of states parties to the Biological Weapons Convention focused on strengthening the treaty's implementation at the national level and advancing regional cooperation. The Implementation Support Unit established last year presented its report on helping member states implement the convention. Also discussed were efforts to increase the pact's membership beyond the present 159 nations. The Nonaligned Nations Movement presented several recommendations to strengthen the BWC, such as a verification regime to ensure compliance, and seven issues to be considered at BWC meetings through 2010, including stricter export and import controls mechanisms, and monitoring of viruses that could be spread intentionally or accidentally. The next Meeting of States Parties is scheduled for December 1-2008 to consider measures to improve biosafety and biosecurity, scientific codes of conduct, and approaches for increasing awareness. The next review conference of the BWC is scheduled for 2011. [See also *Sixth Review Conference of the Biological Weapons Convention* in December 2006 and other related environmental security reports.] [December 2007. [Military Implications, Sources](#)]

### **Biotechnology Risk in Africa**

Advancing developments in biosciences in Africa raise the risks of their potential misuse, thus increasing the need to develop adequate mechanisms for preventing the development and spread of biological weapons. For raising awareness on biosecurity issues and discussing the development of strategies that would encourage biotechnology research without jeopardizing security, a series of workshops were held—notably in Kenya and Uganda, two emerging biotech nations that are not yet properly engaged in international biosecurity policy deliberations. It was emphasized that Africa has to develop its own strategy, adapted to its own specific needs and conditions to reduce the risk of misuse, as well as to mitigate the damage to African scientific development in case of the use of biotechnology for harmful purposes. Africa should also develop a stronger position on regulatory issues and get more engaged in international negotiations related to biosecurity. [See also *ETC Report Warns of the Threat of Synthetic Biology and Calls for Global Regulations* in January 2007 and other environmental security reports on the same issue.] [August 2007. [Military Implications, Source](#)]

### **Bioviolence; Preventing Biological Terror and Crime**

*Bioviolence: Preventing Biological Terror and Crime*, by Barry Kellman is a very well written and documented analysis of the increasing threat of bioterrorism. He argues that the international community is not prepared to counter these dangers, and makes many recommendations that are carefully explained, including strengthening international law. [October 2007. [Military Implications, Sources](#)]

### **Middle East Biosecurity Assessment**

Experts from more than 30 countries from the Middle East, Europe, and Asia addressed biosecurity-related issues in the Middle East and produced an initial assessment of the region's

biological defense capabilities. The three-day ‘Seminar for the Life Sciences and Policy Communities in the Gulf and Middle East and North Africa (MENA),’ held November 12-14 in Abu Dhabi, was organized by the International Council for the Life Sciences in collaboration with the Environment Agency of Abu Dhabi. It examined biological risks and threats in the conditions of the region’s growing biotechnology capabilities and its special security vulnerability. The issue was addressed in its whole complexity from possible causes, to necessary security measures, as well as preparedness in case of natural outbreak, accidental release of laboratory pathogens, or bioterrorism. Participants agreed that international collaboration and developing global standards and codes of conduct are essential in order to address biological risks and threats. An experts’ panel will continue working on Middle East biosecurity issues, and eventually a regional training center for specialists will be created. [See also *ETC Report Warns of the Threat of Synthetic Biology and Calls for Global Regulations* in January 2007 and other items in previous environmental security reports on this theme.] [November 2007. [Military Implications, Sources](#)]

## **Pollution and Greenhouse Gases**

### **Call for Expanding Montreal Protocol on Ozone-Depleting Substances**

On the 20th anniversary of the Montreal Protocol to curb the release of harmful substances into the atmosphere, 191 signatories of the Protocol gathered in Montreal to celebrate this highly successful international treaty and to discuss its expansion. Delegates agreed to accelerate the freeze and phase-out of hydrochlorofluorocarbons (HCFCs)— chemical compounds used in refrigeration systems and air conditioners, and which accelerate both ozone layer damage and climate change. They agreed to halt the production of HCFCs in 2013 and pull forward their elimination by ten years from the previous scheduled phase-out of 2030 for developed countries, and 2040 for developing ones. The United Nations meteorological agency revealed that greenhouse gases could aggravate ozone loss and slow recovery. The theme of this year’s Ozone Day (September 16) was "Celebrating 20 years of progress in 2007". [See also 2007—*The International Year of the Ozone Layer* in January 2007, *Ozone Hole Worst Ever Recorded* (under Climate Change item) in October 2006, and other similar items in previous environmental security reports.] [September 2007. [Military Implications, Sources](#)]

### **Air Travel in the EU to Join the Carbon Emissions Trading System by 2011**

The European Parliament voted to have EU internal and intercontinental flights join the bloc’s carbon emissions trading system by 2011 and that the pollution cap be set at 90% of average emissions from the period 2004-2006. The bill will now be debated by member states. [November 2007. [Military Implications, Sources](#)]

### **EU Advances the Inclusion of Airlines into the Emissions Trading System to 2010**

The EU criticized the recent 36th Assembly of the International Civil Aviation Organization for failing to adopt a framework to reduce greenhouse gas emissions from international aviation. In turn, EU lawmakers proposed to move ahead—to 2010—the inclusion of all airlines flying to, from, and within the EU into the Emission Trading Scheme. The original proposal suggested 2011 for the inter-EU flights and 2012 for international flights landing in or departing from the

27 EU countries. The European Parliament is expected to vote on the bill in November. [See also *Europe to Propose Emissions Targets for All Flights to/from or within Europe* in November 2006, and *EC Proposed Strategy to Curb Greenhouse Gas Emissions from Air Travel* in September 2005 environmental security reports.] [October 2007. [Military Implications, Sources](#)]

### **European Commission Proposed Binding Legislation for Vehicle Emissions Cuts**

The European Commission proposed binding legislation to cap CO<sub>2</sub> emissions from some new passenger cars to 120g/km by 2012. In this way, European carmakers will have to reduce the fleet average CO<sub>2</sub> emissions of new vehicles to 130g/km by 2012 through cleaner engines, while the remaining 10g/km would be reduced by improved fuel-efficiency, increased biofuels use, and better traffic management (presently cars count for 12% of the EU's total CO<sub>2</sub> emissions at an average of around 160g/km). The regulation will be enforced by penalties starting in 2012 at €20 per extra gram of CO<sub>2</sub>, increasing gradually to €95 in 2015. The legislation has to be approved by member states. [See also *EU Commission to Propose Binding Cuts on Car Emissions* in February 2007 and *New European Energy Policy Developments* in March 2006 environmental security reports.]

Similarly, the Euro VI proposal for heavy motor vehicles establishes a reduction of 80% in nitrogen oxides and 66% in particulate matter emissions compared to the current Euro V limits. After approval by the European Parliament and the Council of Ministers, the new regulation is expected to enter into force in 2013. [December 2007. [Military Implications, Sources](#)]

### **European Parliament Passed the Fine Particles Air Quality Directive**

The European Parliament approved the text of a new directive on ambient air quality and cleaner air for Europe. The new legislation replaces and updates five existing laws and for the first time sets binding standards and target dates for fine particles PM<sub>2.5</sub> (particulate matter that is 2.5 micrometers or smaller in size). EU States will have to reduce exposure levels in their urban areas to PM<sub>2.5</sub> by an average of 20% by 2020 compared to 2010 levels, and bring them below 20 micrograms/m<sup>3</sup> by 2015, while keeping the 25 micrograms/m<sup>3</sup> levels throughout their countries. Member States will have two years to adopt the necessary national laws after the directive's entry into force. [See also *EU New Directive on Air Pollution* in October 2006 environmental security report.] [December 2007. [Military Implications, Sources](#)]

## **Energy Saving**

### **North American Trilateral Agreement for Energy Security and the Environment**

Energy ministers for Canada, Mexico and the U.S. endorsed the first trilateral agreement on energy science and technology—a framework designed to enhance North American energy security and environmental protection. It focuses on cooperation in energy science and technology to increase energy efficiency and advance clean energy technologies across North America and the world. Energy security will also be high on the agenda of the North American Leaders' Summit to be held August 20-21 in Montebello, Quebec. [July 2007. [Military implications, Source](#)]

## **Post-Kyoto Protocol Negotiations**

### **Bali Roadmap Sets Framework for Post-Kyoto Negotiations**

About 10,800 participants, including high-level delegations from 187 countries, attended the UN Climate Change Conference in Bali, Indonesia, December 3-15, 2007. The most significant result was the "Bali Action Plan", also called the Bali roadmap. It outlines a two-year agenda of negotiations for a post-2012 global climate regime to enter into force by 2013, but does not include emissions reduction targets, despite strong support by the EU and other countries. The roadmap calls for agreements by the end of 2009 at a major summit in Copenhagen. The agreement is to include both national and international mitigation and adaptation actions to address the effects of climate change, including methods to reduce greenhouse gas emissions, development and transfer of climate-friendly technologies, and financing and investment measures. Four major UNFCCC meetings to implement the Bali roadmap are planned for 2008. Other results of the Bali Convention included the launch of the Kyoto Protocol's Adaptation Fund to finance projects in developing countries; a Forest Carbon Partnership Facility, an addition of deforestation to a post-2012 treaty agenda; and other capacity-building, financial, administrative, and methodological issues. A consortium of mayors and local governments launched the World Mayors and Local Governments Climate Protection Agreement, with six commitments addressing climate change, including the reduction of carbon emissions by 60% to 80% worldwide by mid-century (cities account for 80% of humanity's production of greenhouse gases). [December 2007. [Military Implications, Sources](#)]

### **Conferenes, reports**

The climate change talks organized by the UN Framework Convention on Climate Change in Vienna, Austria, agreed that a global approach is crucial in tackling climate change and its effects, and prepared the way for further negotiations for a post-Kyoto treaty to be discussed at the December summit in Bali. Climate change and post-Kyoto strategies are also expected to top the agenda of the Asia Pacific Economic Cooperation (APEC) summit to be held on September 8. Meanwhile, the secretariat of the UNFCCC released first results indicating that countries will meet criteria to begin trading in Kyoto emission allowances for 2008, the first year of the Treaty's first commitment period. [August 2007. [Military Implications, Sources](#)]

The UN's "The Future in our Hands: Addressing the Leadership Challenge of Climate Change", the largest-ever meeting of world leaders on climate change, was held on 24 September at the UN headquarters in New York, as a preamble to the UN high-level General Assembly, to set the stage for the December Bali negotiations on a post-Kyoto treaty to address climate change and GHG emissions. It addressed aspects related to adaptation, mitigation, technology, and financing. Participants agreed that a new treaty to address climate change was needed, and that the UNFCCC is the most appropriate forum to conduct the negotiations. Meanwhile, the number of lawsuits dealing with global warming is increasing around the world. Environmentalists are hoping to increase pressure on policymakers and companies to change to more environment-friendly and low-GHG emission policies. Initiatives such as the Carbon Disclosure Project (which sent letters to 2,400 large firms around the world) are demanding that



corporations be more transparent and accountable in disclosing their GHG emissions and their activities' impact on climate change. [September 2007. [Military Implications, Sources](#)]

As a prelude to the December Bali summit, environment ministers from about 40 nations held an informal meeting in Indonesia, agreeing that the world must finalize a climate change treaty by 2009, to leave enough time for countries to ratify it before the Kyoto Treaty expires in 2012. Countries key for the negotiations were represented in the meeting—low-lying countries such as the Maldives, OPEC such as Saudi Arabia, the U.S., Australia, China, and India. Also in preparation for the Bali Summit, in November the Government of Maldives will be hosting an international conference, “The Human Dimension of Global Climate Change,” with the theme “Recognizing environmental security as a fundamental human right,” said Maldives President, Maumoon Abdul Gayoom.

*Contributions to accelerating atmospheric CO<sub>2</sub> growth from economic activity, carbon intensity, and efficiency of natural sinks*, a study conducted by the Global Carbon Project in cooperation with other research institutions, reports that increase in atmospheric CO<sub>2</sub> is due to faster economic growth coupled with slowing improvements in carbon intensity, and decreasing efficiency of natural sinks in removing emissions from human activities. The paper says that 2006 CO<sub>2</sub> releases were 35% above the 1990 level. “The longer we delay reducing emissions, the more restorative capacity will be lost,” added CSIRO scientist Dr Mike Raupach, co-chair of the Global Carbon Project. [October 2007. [Military Implications, Sources](#)]

The IPCC *Fourth Assessment Report (AR4) Summary for Policymakers* [see item above] is a fundamental document for policymakers in preparation for the UN Climate Change Conference to be held in Bali, Indonesia, 3 -14 December 2007.

The "Singapore Declaration on Climate Change, Energy and the Environment" adopted at the East Asia Summit attended by leaders of 16 Asian nations, including China and India, pledges action on climate change and declares support of the UN plan as the “core mechanism” for tackling global warming, and commits to support efforts to negotiate an effective post-2012 international arrangement under the United Nations Framework Convention on Climate Change (UNFCCC) process. The same position emerged from the Asia Southeast Asian Nations – European Union (ASEAN-EU) United Summit, where delegates acknowledged that “developing countries should also play their part [in GHG emissions reduction], supported by developed countries through positive incentives, including through a strengthened global carbon market.” Government representatives attending the Alliance of Small Island States (AOSIS) discussed collaboration on coping with the devastating effects that climate change has on their nations, and on advancing the international negotiations for a comprehensive post-Kyoto Treaty during ‘The Human Dimension of Global Climate Change’ conference with the theme ‘Recognizing environmental security as a fundamental human right’. The Maldives President, Maumoon Abdul Gayoom, reiterated the importance of recognizing “environmental protection as a fundamental human right” and announced that the Maldives will initiate a debate on the issue with the Human Rights Council. [November 2007. [Military Implications, Sources](#)]



## **Biological Diversity**

### **UN General Assembly Adopts Global Forest Agreement**

The “Non-Legally Binding Instrument on All Types of Forests” adopted by the UN General Assembly on December 17, 2007 sets the political framework and standards for sustainable forest management and monitoring to stabilize climate change and protect biodiversity and ecosystems. The agreement suggests mechanisms for systematic monitoring and reporting at the national level, as well as means for international collaboration, ranging from funding developing countries for reducing deforestation, to technology transfer and capacity building for forest management. Although not binding, the forests agreement is an important political instrument to improve nations’ forest management. [See also *United Nations Agreement to Protect the World’s Forests Adopted* in May 2007 environmental security report] [December 2007. [Military Implications, Sources](#)]

### **UNESCO Added 23 New Reserve Sites in 18 Countries**

UNESCO added 23 new sites in 18 countries to the World Network of Biosphere Reserves that are managed on sustainable development principles to reduce biodiversity loss. Three countries join the global network—El Salvador, Qatar, and the United Arab Emirates. The new additions include 2 sites in each: Argentina, Canada, China, El Salvador, and Portugal, and 1 site in each: Australia, Chile, Costa Rica, Ecuador, Lebanon, Mexico, Federated States of Micronesia, Mongolia, Qatar, South Africa, Spain, United Arab Emirates, and Viet Nam. UNESCO’s Man and the Biosphere (MAB) network now comprises 529 sites in 105 countries. [See also *New Sites Added to World’s Protected Biosphere Reserves* in October 2006 and others on the same issue in previous environmental security reports.] [September 2007. [Military Implications, Source](#)]

## **Marine Environment**

### **Tougher Law of the Sea Regulations Suggested for Marine Genetic Resources**

The UN Open-ended Informal Consultation Process on Oceans and the Law of the Sea produced some recommendations for improving the management and protection of marine genetic resources, including designing enforceable regulations along with liabilities and responsibilities related to marine genetic resources; increasing protection of the marine environment from the effects of man-made factors; and encouraging collaborative research, access and use of marine resources in areas beyond national jurisdiction. Although the UN Convention on the Law of the Sea is recognized as the legal framework for all activities in the oceans and seas, there is disagreement on how the Convention applies to marine genetic resources in areas outside national jurisdictions. The G-77 group of developing countries and China consider marine genetic resources “common heritage of mankind”; while Japan, the U.S. and some other developed countries argue that they fall under the provisions relating to the high seas. The debate will continue in 2008 at the UN Ad Hoc Open-ended Informal Working Group on issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction. [July 2007. [Military Implications, Sources](#)]

### **Anti-Fouling Systems on Ships Convention to Enter into Force in September 2008**

The International Convention on the Control of Harmful Anti-Fouling Systems on Ships (AFS Convention) will enter into force on September 17, 2008 (12 months after fulfilling the criteria for entry-into-force.) The AFS Convention bans the use of organotin compounds on ships' hulls or external surfaces, requires the application of an isolating coating for ships already carrying such compounds, and establishes a mechanism to assess other anti-fouling systems to prevent the use of potentially harmful substances in these systems. The Convention will apply to all ships and floating units operating under the flag of a Party to the Convention and/or entering the port, shipyard, or offshore terminal of a Party. [September 2007. [Military Implications, Sources](#)]

### **Shipping to Face New Regulations to Reduce Air Pollution**

Concerns over air pollution by marine navigation are rising and, similarly to the aviation industry, it is likely that the shipping industry will one day be held responsible and asked to act on its GHG emissions. Given the industry's global extent, global regulations are needed and expected. The International Maritime Organization (IMO) launched in July a comprehensive study to assess the shipping industry's contribution to CO<sub>2</sub>, sulfur dioxide, toxic nitrous oxide, and particulate emissions, and the impacts on air quality. Results are expected by the end of this year. Along the same lines, the theme of World Maritime Day 2007 was "IMO's response to current environmental challenges" in order to enhance awareness of the industry's environmental impact, and trigger compelling action.

Note: This month, Friends of the Earth sued the U.S. EPA in federal district court for failing to meet the April 2007 deadline to regulate air pollution from large ships. Meanwhile, the Marine Vessel Emissions Act of 2007—that would require cleaner fuels and engines in all ocean-going vessels calling at U.S. ports—was introduced in the Senate (SB 1499) and the House of Representatives (HR 2548). [September 2007. [Military Implications, Sources](#)]

### **Shipping Regulations for Protecting Whales**

Transport Canada, Environment Canada, and a group of marine mammal researchers submitted a proposal to the IMO calling for diversion of large vessels in the Roseway Basin (southwest of Nova Scotia) to protect the endangered North Atlantic right whale. Several right whales are killed annually by collisions with large ships. The ban would prohibit shipping traffic in a 1,780 square kilometer area around Roseway Basin. Also to protect the North Atlantic right whale, the U.S. Fisheries Service proposed speed limits on the east coast. Similarly, a petition by the U.S. Center for Biological Diversity calls upon the National Marine Fisheries Service to protect endangered blue whales by setting a speed limit of 10 knots in the Santa Barbara Channel (California) for vessels 65 feet or larger while whales are in the area. [September 2007. [Military Implications, Sources](#)]

### **London Convention Might be Expanded to Include Ocean-based Geoengineering**

Parties to the London Convention on dumping of wastes at sea unanimously decided that a more cautious approach is needed concerning ocean-based geoengineering, which is scientifically unjustified and should be internationally regulated. A coalition of civil society groups suggested that an international process should begin, "to put all geoengineering technologies under intergovernmental oversight." Thus, other international regulations—such as the UN Convention

on Biological Diversity—might also be expanded. The Jeddah Declaration adopted on November 1st by the ninth global meeting of the Regional Seas Conventions and Action Plans also highlights the importance of a healthy marine environment to human security. [See also *Tougher Law of the Sea Regulations Suggested for Marine Genetic Resources* in July 2007, *The Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter Enters Into Force* in March 2006, *Accelerating Synthetic Biology Applications Need Better Monitoring and Regulation* in July 2007 and other previous environmental security reports on similar issues.] [November 2007. [Military Implications, Sources](#)]

### **Micronesian Nations Sign Coral Reef Protection Document**

The presidents of Palau, Micronesia, and the Marshall Islands became the first heads of state to sign the International Declaration of Reef Rights, created by the Reef Check Foundation to raise awareness about the value of coral reefs and how to protect them. 2008 is the International Year of the Reef. [September 2007. [Military Implications, Sources](#)]

### **Baltic Ministers Recommend Additions to Baltic Sea Action Plan**

The meeting of the environment ministers of the Nordic countries (Denmark, Finland, Iceland, Norway, and Sweden), held in Finland at the end of August, focused on the condition of the Baltic, the Nordic countries' actions on climate change, and the future of international environment management (including the Nordic initiative to strengthen UNEP.) The ministers called for tangible measures to protect the Baltic Sea (e.g., a ceiling on emissions of nutrients) and their inclusion in the Baltic Sea Action Plan (BSAP) due to be approved by the Baltic nations environment ministers at the meeting of the Helsinki Commission for the Protection of the Baltic Sea Environment (HELCOM) to be held on November 15, in Krakow, Poland. [September 2007. [Military Implications, Sources](#)]

### **EU Integrated Maritime Policy**

The European Commission has adopted an Integrated Maritime Policy for the EU. The new policy will build on Europe's strengths in marine research, technology, and innovation, as well as space technology, for ensuring maximum environmental sustainability. [See also *Political Agreement Reached on the European Marine Strategy Directive* in December 2006, *Europe to Harmonize Marine Pollution Legislation* in July 2005, and *International Maritime Organization wants global rather than many different local or regional rules* of January 2003 environmental security reports.] [October 2007. [Military Implications, Source](#)]

### **European Parliament Passed the Marine Strategy Directive**

The European Parliament approved the text of the Marine Strategy Directive that calls for the establishment of marine regions and sub-regions to be managed by Member States on a coherent and coordinated ecosystem-based approach and for ensuring that the marine strategies affecting the regions are coherent and coordinated. Member States are to assess the status of their region's marine environment, set objectives, and establish targets and programs by 2015 to attain good environmental status by 2020 and establishment of marine protected areas. [See also *Political Agreement Reached on the European Marine Strategy Directive* in December 2006 and other

similar items in previous environmental security reports.] [December 2007. [Military Implications, Sources](#)]

### **Transport Canada Proposes New Vessel Operation Regulations**

The Canadian Ministry of Transport, Infrastructure and Communities is proposing Vessel Operation Restriction Regulations as part of the Canada Shipping Act 2001 (CSA 2001), which came into effect on July 1, 2007. The new regulation will replace the existing Boating Restriction Regulations and includes restrictions on boating activities and navigation in Canadian waters as to type or speed of vessels, mode of propulsion and engine power, and access by vessels to specific areas. A 60-day comments period began on August 18, 2007, after the publication of the proposed regulations in the Canada Gazette. After consideration of all comments received, Transport Canada will finalize the regulations and publish them in the Canada Gazette, Part II, at which time they will come into effect. [August 2007. [Military Implications, Sources](#)]

### **Heavy Metals**

#### **Call for Global Ban on Lead-based Paints**

Scientists are calling for international regulations to ensure that paints have lower than critical lead levels, with the ultimate goal of eliminating all lead from paint. The call comes as a result of a study on consumer paint lead levels in Africa, conducted by a multinational team of environmental and occupational health researchers. Note: The Budapest Statement on Mercury, Lead and Cadmium adopted at the fifth session of the Intergovernmental Forum on Chemical Safety held in September 2006 invites the UNEP GC “to give high priority to considering [...] measures, as appropriate, on lead and cadmium, by assessing the need for further action and considering a range of options, including the possibility of establishing a legally binding instrument.” [October 2007. [Military Implications, Sources](#)]

### **IMPROVED COMPLIANCE WITH ENVIRONMENTAL REGULATIONS**

#### **Calendar with Environmental Deadlines Compliance**

The 2008 Compliance Calendar by the Environmental Resource Center is an excellent tool summarizing the most important deadlines for compliance with U.S. environmental regulations and reporting. In addition to highlighting the deadlines, it also contains a summary of the most important environmental regulations and responsible organizations. [September 2007. [Military Implications, Sources](#)]

#### **IAEA to Improve Nuclear Security in 35 Countries**

The EU contributed €7 million to IAEA’s Nuclear Security Fund to improve nuclear security in 35 countries, including 27 in Africa. The focus will be to secure radioactive materials and sites at risk of sabotage and improve capabilities to detect and respond to illicit trafficking in some African countries, including Ghana, South Africa, Morocco, Nigeria, Sudan, Tanzania, Uganda

and Zambia. The program will also work to strengthen national legislation and regulatory infrastructures related to nuclear and radioactive material in—among other countries — Azerbaijan, Cape Verde, Comoros, Croatia, Swaziland, and the Former Yugoslavia Republic of Macedonia. Despite the latest contribution, “IAEA’s nuclear security programme remained 90 per cent funded through unpredictable and heavily conditioned voluntary contributions,” notes IAEA Director General Mohamed ElBaradei. [July 2007. [Military Implications, Source](#)]

### **Problems with Destruction of Chemical Weapons and Potential Proliferation**

Only 30% of known chemical weapons stocks have been destroyed over the past ten years. The remaining 70% are supposed to be totally destroyed by 2012 to meet the Chemical Weapons Convention. Also during the UN First Committee (Disarmament and International Security) session, it was reported that while reliable safeguards structures have been established in many countries, moving chemical and biological production to Africa, Asia, Eastern Europe, and Latin America, where industrial regulations are inadequate, creates new verification challenges. The first Industry and Protection Forum to promote the implementation of the Chemical Weapons Convention and to discuss practical implementation issues will be held at the World Forum Convention Center in The Hague, November 1-2. [See also *New Concerns Rising over Chemical Weapons* in April 2007 and other related items in previous environmental security reports.] Concerning nuclear disarmament, Mexico’s representative introduced a draft resolution on behalf of the New Agenda Coalition (Brazil, Egypt, Ireland, Mexico, New Zealand, South Africa and Sweden): “Towards a nuclear-weapon-free world, accelerating the implementation of nuclear disarmament commitment.” [October 2007. [Military Implications, Sources](#)]

### **Global Health Security Initiative Upgrades Its Strategic Policy Process**

The eighth ministerial meeting of the Global Health Security Initiative reviewed the risks and threats of highest priority to global health security, such as chemical, biological, and radio-nuclear terrorism, and pandemic influenza and agreed on a strategy for addressing them. In that view, the group decided “to strengthen its role as a policy forum by identifying emerging issues and coordinating policy development processes to address chemical, biological and radio-nuclear threats” and to strengthen its network and communication capacities. The Global Health Security Initiative is an informal effort involving top health officials from Canada, France, Germany, Italy, Japan, Mexico, UK, U.S., and the E.U. [See also *Asian New Strategy to Improve Health and Environment* in August 2007, *Proposed Global Early Warning System for Monitoring Pandemics* in May 2007, and other related environmental security reports.] [November 2007. [Military Implications, Source](#)]

### **EC Enforces Compliance of National Legislation with EU Environmental Regulations**

The European Commission opened several infringement procedures against Member States for not complying with EU environmental legislation. Some of the EC legal actions include: referring Ireland to the European Court of Justice over inadequacy of its national legislation for the implementation of the Environmental Impact Assessment Directive; legal action against the UK for not fully complying with ECJ judgments in two separate cases; Luxembourg and Belgium for non-compliance with the EU Directive on urban waste water treatment; final written warning to 12 EU Member States for failing to adopt emergency plans for chemical plants; action against several EU countries for exceeding EU limits on ambient concentrations of SO<sub>2</sub>;

“Letter of Formal Notice” to Estonia, Latvia, and Lithuania for not correctly transposing certain provisions of the WEEE Directive into national legislation, and to Belgium, Denmark, Lithuania, Malta, Finland, and Sweden for inadequate implementation of the RoHS Directive into national law. [See also *E-waste Management Directive Came into Effect on August 13, 2005* in August 2005, and *RoHS Closer to Deadline* in May 2006 environmental security reports.] [October 2007. [Military Implications, Sources](#)]

### **China’s Emergency Response Law to Punish Falsifying Environmental Information**

The Emergency Response Law, which came into effect in China on November 1st, has the objective of improving public security and reducing the environmental and health effects of natural disasters and industrial accidents. It requires government to provide accurate and timely information on public emergencies, and false reporting is banned and punishable. The law also says that in extremely serious emergency situations, which “severely threaten life and property, state security, public security, environmental security or public order (which are not specifically covered by the provisions in the law), the NPC Standing Committee or the State Council can declare a ‘state of emergency’ in accordance with the Constitution and relevant laws.” [See also *China May Restructure Environmental Effort* in October 2007 and other related items in previous environmental security reports.] [November 2007. [Military Implications, Source](#)]

## **NEW STANDARDS WITH IMPLICATIONS FOR ENVIRONMENTAL SECURITY**

### **New ISO Standard on Sustainable Building**

ISO 21930:2007—Sustainability in Building Construction -- Environmental Declaration of Building Products complements ISO 14025 for the environmental product declarations (EPD) of building products, containing specifications, principles, and requirements, to encourage sustainable building. It sets the framework for environmental declarations of building products and takes into consideration the entire life cycle of a building. [December 2007. [Military Implications, Sources](#)]

## **HEALTH ISSUES**

### **Pandemics and Other Health Issues**

#### **WHO Report 2007 Addresses Global Health Security Threats**

*The World Health Report 2007 - A safer future: global public health security in the 21st century* addresses for the first time health issues as security issues. It notes the increasing risk of disease outbreaks, epidemics, industrial accidents, natural disasters and other health emergencies, which could become threats to global public health security. The report explains the role of the International Health Regulations, which came into force this year, in helping countries’ collaboration to identify and contain risks from outbreaks and other health hazards. The report points out pandemic influenza as the most feared threat to health security. [August 2007. [Military Implications, Sources](#)]



## **Potential Health and Environmental Threats of Some New Technologies**

### **Nanotechnology**

The European Commission (EC) invites comments on the proposed Recommendation on a Code of Conduct for Responsible Nanosciences and Nanotechnologies Research. The Commission intends to collect views on the safe development of NST from a broad audience, ranging from research, industry, civil society, policy and media, and the general public.

The UK's Royal Society and a group of other organizations have begun an initiative to develop a "Responsible NanoCode" for businesses working with nanotechnologies. According to Nanowerk, "The aim of the Code will be to establish a set of internationally relevant principles which outline good practice for businesses involved in all aspects of these emerging technologies and their applications including research, development, manufacturing, distribution and retailing." The code will be developed by a working group of representatives from a variety of stakeholders.

A U.S. Congressional bill 'To ensure the development and responsible stewardship of nanotechnology' was referred on July 31, 2007 to the Committee on Science and Technology, and in addition to the Committees on Ways and Means, Energy and Commerce, and Homeland Security.

A "Pollution Prevention through Nanotechnology" conference will be held September 25-26, 2007, in Arlington, VA. The forum is organized by EPA to improve understanding of nanotechnology and to "encourage responsible development of nanotechnology that prevents pollution." [July 2007. [Military Implications, Source](#)]

*Current Developments/Activities on the Safety of Manufactured Nanomaterials/Nanotechnologies* report by the Organization for Economic Co-operation and Development (OECD) summarizes the 2nd Meeting of the Working Party on Manufactured Nanomaterials held in Berlin, Germany, April 25-27 2007. It catalogs the initiatives in industrialized countries to address the health and environmental safety implications of manufactured nanomaterials organized by progress since the first meeting and work underway or planned in the country or organization. The recommended headings were:

1. Any national regulatory developments on human health and environmental safety including recommendations or discussions related to adapting existing regulatory systems or the drafting of laws/ regulations/ guidance materials;
2. Developments related to voluntary or stewardship schemes;
3. Information on any risk assessment decisions;
4. Information on any developments related to good practice documents;
5. Research programmes or strategies designed to address human health and/ or environmental safety aspects of nanomaterials;
6. Information on any public/ stakeholder consultation.

EPA Conference on Nanoscale Materials. On 13 August EPA announced that it will be holding a Peer Consultation on Materials Characterization of Nanoscale Materials: September 6-7, 2007, in Rosslyn VA. The meeting's goal is to help develop EPA's Nanoscale Materials Stewardship Program (NMSP) under the Toxic Substances Control Act (TSCA). EPA is requesting comment on characteristics currently used or potentially available to characterize

nanoscale materials, rationale for the use of these characteristics, and issues to consider regarding use of these characteristics in the NMSP.

Study Shows Nanotube Manufacture May Pollute Environment. A study by Desirée L. Plata and colleagues at MIT, reported at the 234th national meeting of the American Chemical Society, has shown that chemical vapor deposition, one of the main methods for making carbon nanotubes, can release into the environment various toxic polycyclic aromatic hydrocarbons, and other hydrocarbons that are harmful to the atmosphere and human health.

Canada published a new Substances Program Advisory Note 2007-06, Requirements for nanomaterials under the New Substances Notification Regulations (Chemicals and Polymers)

The Nanotechnology Engagement Group published its final report, *Democratic technologies?* addressing public involvement, dialogues, and ethical aspects of nanotechnology. [August 2007. [Military Implications, Source](#)]

*REFNANO: Reference materials for engineered nanoparticle toxicology and metrology* addresses the potential role of reference materials in toxicology and metrology created by a team of UK scientists, commissioned by the UK Department for Environment, Food and Rural Affairs (Defra). It provides a prioritized list of reference materials relevant to nanotechnology, focusing on materials produced and used in the UK.

The Director of the Woodrow Wilson Center's Project on Emerging Nanotechnologies has indicated disappointment with a recent report, *Prioritization of Environmental, Health, and Safety Research Needs for Engineered Nanoscale Materials*, prepared by a working group of the Nanoscale Science, Engineering, and Technology Subcommittee (NSET), part of the federal government's National Science and Technology Council. The Director states, "Notably absent are important details like budget allocations, implementation time frames, and assigned responsibilities." [September 2007. [Military Implications, Source](#)]

UK Government Nanotechnology Policy Workshop for Industry held on October 19, 2007, organized by the Department for Environment, Food and Rural Affairs (Defra) and the European Nanotechnology Trade Alliance (ENTA) to provide updates from the UK government regarding: research progress from the nanotechnology research coordination group; Defra's voluntary reporting scheme; Council for Science and Technology report on government progress against nanotechnology commitments; overview of the international efforts; and industry perspectives.

BSI British Standards is publishing nine documents addressing nanotechnology health and safety issues for UK industry; seven deal with terminology—from fabrication to labeling—and two provide guidance for safe handling and disposal of free engineered nanoparticles, and for specifying nanomaterials.

Indian scientists warn that India faces serious nanotech environmental health and safety issues due to absence of guidelines on nanoparticle toxicity and biosafety regulations in India and worldwide. Scientists from the Energy Resources Institute in Delhi launched a study this year to investigate the opportunities and risks associated with the technology. [October 2007. [Military Implications, Source](#)]

Scientists at Cambridge Univ. and the Daresbury Laboratory have developed a new method of studying the effects of carbon nanotubes on living cells. Alexandra Porter, a lead scientist at Cambridge, has explained that, by using transmission electron microscopy (TEM) and confocal

microscopy, the entry and migration of nanotubes into and within cells can be visualized. First results, published in the October 28 online edition of *Nature Nanotechnology*, showed that cell death caused by certain nanotubes depended on the dose and exposure time and suggest that the toxicity is linked to the movement of the tubes into the cytoplasm and nucleus of a cell. This might help to elucidate the relationship between the physics and chemistry of nanomaterials and their biological effects, and hence help nanotech EHS research. [November 2007. [Military Implications, Source](#)]

*Nanotechnology large risks with tiny particles* report by KemI, Sweden's chemical regulators, proposes that the Government: allocate special research funds to the Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (Formas) for research on health and environmental risks of nanomaterials; instruct the Swedish Chemicals Agency to: follow developments in the area and propose measures whenever justified, and to participate actively in the development of new or modified testing methods within the OECD cooperative framework; instruct the Swedish Chemicals Agency to produce a deeper analysis of the use of nanomaterials in chemical products and articles after consultation with the trade organizations concerned; instruct the governmental agencies concerned to review the need for complementing existing legislation; arrange, in the context of Sweden's EU presidency in 2009, a workshop on how the health and environmental risks of nanotechnology should be dealt with by legislation. [November 2007. [Military Implications, Source](#)]

The U.S. Agency for Toxic Substances and Disease Registry (ATSDR) (part of the Department of Health and Human Services) has requested nominations from a list of proposed substances that it will evaluate for toxicological profile development. The list of proposed substances includes nanomaterials. The list of selected substances will be published late winter or early spring in the Federal Register. The added profiles will be publicly available in October 2008. Interested parties can monitor the profile list for the latest information at <http://www.atsdr.cdc.gov/toxpro2.html>. [November 2007. [Military Implications, Source](#)]

A U.S. national survey on the potential impacts of nanotechnology reveals that while more optimistic about the possible benefits of nanotechnology, nanoscientists are significantly more concerned than the general public for some issues related to the environmental and health impacts of nanotechnology. They say that more research is needed to assess nanotech long-term implications. Only 15% to 20% of the public expressed concern related to nanotech risks, versus 20%-30% by nanoscientists. The study was published in *Nature Nanotechnology* (November 25.) [November 2007. [Military Implications, Source](#)]

*The challenge of regulating nanomaterials* is a well-documented article published in the *Environmental Science and Technology* journal, offering an excellent overview of the nanotechnology-related risks and regulations picture. [November 2007. [Military Implications, Source](#)]

EuroNanOSH, the first European Conference focusing on occupational safety and health from the viewpoint of nanotechnology and engineered nanoparticles in workplaces, will be held in

Helsinki 3-5 December 2007. According to the announcement, “The Conference will evaluate the current safety situation of engineered nanoparticles in Europe and consider what actions are required in the near future. ... one of the main objectives of the Conference is to present the current understanding regarding the safety of engineered nanoparticles and to draw conclusions to protect workers both within and outside of Europe.” [November 2007. [Military Implications, Source](#)]

The Nanotechnology for Security and Crime Prevention III conference, organized by the Institute of Nanotechnology, will be held January 17, 2008, at The Royal Society, London. The conference will provide an update on the latest advances in nanotechnology with applications for security and fight against crime. Several papers on chemical detection will be presented. [November 2007. [Military Implications, Source](#)]

The first nanotechnology genotoxicity (toxicity at the molecular level) tests found that carbon nanotubes could damage DNA. Researchers at the University of Dayton have assessed the DNA damage response to multi-walled carbon nanotubes (MWCNT) in mouse embryonic stem cells. The methodology used is highly versatile for testing genotoxicity and hence can be expanded for genotoxicity tests of other nanomaterials. [December 2007. [Military Implications, Source](#)]

The “Nanotechnology & the Media: The Inside Story” meeting held at the Woodrow Wilson Center discussed the results of a study analyzing media coverage of nanotechnology risks in the U.S. and UK. The study reveals a large increase in the number of articles, with the focus being mainly on health, environmental and security aspects. Coverage is higher for regulatory and reports related issues than for scientific matters. Concerns about nanotech risk are increasing at non-profits and governments, and governments are responding most strongly to risk concerns. In general, there was a strong feeling that there is not enough media coverage on the nanotech risk issues. [December 2007. [Military Implications, Source](#)]

## **Chemicals and Biotechnology**

### Possible Risk with Bisphenol A Receiving Increased Attention

Opinions continue to be divided on the environmental danger posed by bisphenol A, a chemical widely used to harden plastics. The NIH National Toxicology Program issued a controversial preliminary report citing minimal risk to adults, but another panel, led by Prof. Fred vom Saal of the Univ. of Missouri, expressed “a very high level of concern”, according to one of its members. An EPA spokeswoman has conceded that its 14-year-old safe level for the chemical is out of date, and says the agency is now studying it. Various studies around the world have not yet produced a clear indictment of the compound as a serious environmental hazard. [December 2007. [Military Implications, Source](#)]

## POLLUTION ISSUES

### Human Ecological Footprint Increasing Each Year

The 2007 'Ecological Debt Day' was on October 6, three days earlier than in 2006, noted the New Economics Foundation. 'Ecological Debt Day' marks the day of the year when human consumption begins surpassing the Earth's ability to sustain it. The point has been reached earlier every year since the 1980s, when the world began to live beyond its means. The results of a study using the ecological footprint index also revealed that the world is developing very unsustainably. The study is looking at how the lifestyles and ecological footprints of 93 nations have changed in the last 30 years. It is the first study of this kind and was conducted by an international team of the Global Footprint Network. [October 2007. [Military Implications, Sources](#)]

### Demographics and Destiny: Trends We Need to Understand in the 21st Century

*Demographics and Destiny: Trends We Need to Understand in the 21st Century* by Endy Zemenides, argues that demographics is one of the important factors framing the 21st century security agenda, and points out 10 key demographic trends: 1) aging of the developed world; 2) youth bulges in the Islamic world; 3) long term population decline in Russia; 4) rise of urbanization/megacities in the developing world; 5) negative birth rates in Europe; 6) developed world's reliance on immigration; 7) Islamization of Europe; 8) steep increase in the number of Chinese and Russians with lung cancer, heart disease and other pollution-related health problems; 9) population growth around limited renewable resources; and 10) high fertility rates in the developing world. Demographics, the article argues, can change the way we fight war and add reasons for fighting wars. The author concludes that the U.S. must recognize the looming demographic issue and develop a comprehensive demographic strategic plan. [October 2007. [Military Implications, Sources](#)]

### Asia's Progress Jeopardized by Environmental Degradation

*The Millennium Development Goals: Progress in Asia and the Pacific 2007* report by the Asian Development Bank and UNDP hails progress in Asia, showing that the continent might reach the UN Millennium Development Goals for poverty, gender parity, and primary education coverage before the 2015 plan. However, the report warns that this might be jeopardized by environmental degradation (including deforestation and land degradation), poor water management (including flooding), rising pollution in urban areas, and CO2 emission contributing to climate change. [October 2007. [Military Implications, Sources](#)]

### Bottled Water Becomes Target of Environmentalists

Organizations around the world are becoming active in opposing the now rapidly increasing use of bottled water, and regulations and restrictions are beginning to be applied to its distribution. Shipping bottled water across the Atlantic and Pacific by oil-propelled ships does seem odd. One estimate puts the annual fossil fuel footprint of bottled water consumption in the United States at over 50 million barrels of oil equivalent—enough to run 3 million cars for one year. Beginning January 1, 2008 the city government of San Francisco has banned its departments and agencies from purchasing bottled water, and St. Louis is considering the same ban for its city employees

in early 2008. With increased discourse around bottled water, it is likely that some international directives will be adopted to regulate its trade and distribution. [December 2007. [Military Implications, Sources](#)]

## **NEW INITIATIVES AIMING TO INCREASE ECO-EFFICIENCY**

### **Corporate CEOs Pledge Actions on Climate Change at UN Global Compact Summit**

More than 150 CEOs signed the “Caring for Climate” platform at the UN Global Compact Summit held in Geneva July 5-7, including 30 from the Fortune Global 500. The pledge called for companies to reduce their carbon emissions and meet energy-efficiency targets, and called on governments to establish post-Kyoto market mechanisms to reduce greenhouse gas emissions. [July 2007. [Military implications, Sources](#)]

### **Global Trends in Sustainable Energy Investment 2007**

*Global Trends in Sustainable Energy Investment 2007— Analysis of Trends and Issues in the Financing of Renewable Energy and Energy Efficiency in OECD and Developing Countries* is a report by UNEP Sustainable Energy Finance Initiative and New Energy Finance organization. It is an overview of the financial aspect of the current status of sustainable energy development, with regional and sectoral trends. The analysis is intended for stakeholders and policy makers with involvement in sustainable energy. [July 2007. [Military Implications, Source](#)]

### **Renewable Energy Projects May Face New Scrutiny**

According to a paper published in Inderscience's International Journal of Nuclear Governance, Economy and Ecology, some renewable energy sources might not be so green and might even be damaging to the environment. The paper's author, Jesse Ausubel, Director of the Rockefeller University's Program for the Human Environment in New York, focuses primarily on land use efficiency of the various alternatives (e.g. wind, biomass, hydro), and points to nuclear as the best choice from the standpoint of minimizing environmental footprint. [July 2007. [Military Implications, Source](#)]

### **US EPA recommendations for "Green Infrastructure"**

US EPA has a website for "green infrastructure," with information about improving relationships between the built and natural environments. [September 2007. [Military Implications, Source](#)]

### **Green Un-building Becomes Major Environmental Goal**

The practice of "green un-building" – environmentally friendly demolition – is becoming a major goal of environmental groups worldwide. Reuse or recycling of materials from destroyed structures can save enormous amounts of scarce resources. [October 2007. [Military Implications, Source](#)]



### **Green Information Technology is forecasted as 2008 top IT Strategy**

Gartner, Inc., a leading news source in information technology (IT), is predicting that concern for environmental issues will have a most significant impact on IT planning and operations over the next three years. The major factors involved here are energy conservation and efficiency, material conservation and recycling, and “green building” of data processing installations. UN-GAID will co-sponsor a conference and exhibit, The Positive Impact of ICT (Information and Communications Technology) on the Environment and Climate Change, on 27-28 November 2007, at the United Nations. Tutorials will focus on the role of information and communication technologies in assuring environmental sustainability. They will address the broader issue of information and communication technologies’ impact on the environment and climate change. [October 2007. [Military Implications, Source](#)]

## 2. Military Implications and Sources

### A Preventing or repairing military damage to the environment

#### ENVIRONMENTAL SECURITY RISES ON THE INTERNATIONAL POLITICAL AGENDA

##### UN to Shift Attention from Reaction to Prevention of Conflicts

###### *Military Implications:*

Military resources have studied the nature of conflict in many situations for many years. Lessons learned about conflict precursors, forecasting and prevention should be made available through relevant channels to support the UN's change of emphasis from reaction to prevention.

Alternative scenarios could be created about how military forces could be better deployed for prevention. Since environmental issues are increasingly recognized as a contributing cause of future conflicts, the military might consider increasing cooperation with environmental forecasting organizations in order to improve its capacity to anticipate and prevent conflicts.

###### *Sources:*

Security Council Reiterates Commitment to Conflict Prevention in Africa; Presidential Statement Follows Day-Long Debate

<http://www.un.org/News/Press/docs//2007/sc9105.doc.htm>

U.N. spent \$18 billion on peacekeeping in past five years, but not enough on conflict prevention

<http://www.iht.com/articles/ap/2007/08/29/news/UN-GEN-UN-Conflict-Prevention.php>

New York, 28 August 2007 - Secretary-General's remarks to the Security Council at open debate on conflict prevention and resolution, particularly in Africa

<http://www.un.org/apps/sg/sgstats.asp?nid=2712>

UN highlights growing role of international policing as global meeting opens in Australia

<http://www.un.org/apps/news/story.asp?NewsID=23643&Cr=police&Cr1=>

##### UN General Assembly Focuses Government Leaders on Climate Change

###### *Military Implications:*

The military should bring together information on all its efforts to reduce climate change and its capacities to anticipate and respond to the effects of climate change (e.g., an executive information system) for continual review and improvement. This would be in anticipation for higher-level requests.

###### *Sources:*

UN General Assembly—General Debate (25 September - 3 October 2007); Statements and Webcast

<http://www.un.org/webcast/ga/62/>

Ban Ki-Moon Convenes Largest-Ever Meeting Of Global Leaders On Climate Change

<http://www.un.org/apps/news/story.asp?NewsID=23926&Cr=climate&Cr1=change>

As the waters rise

[http://www.economist.com/world/international/displaystory.cfm?story\\_id=9867337](http://www.economist.com/world/international/displaystory.cfm?story_id=9867337)

President of the UN General Assembly's comments during private briefing by the director of the Millennium Project (Glenn jglenn@igc.org)

## **OSCE Adopts Ministerial Declaration on Environment and Security**

### *Military Implications:*

Military personnel with environmental security responsibilities where OSCE operates should be notified of this declaration, since it should strengthen the organization's commitment to environmental matters and consequently influence field missions.

### *Source:*

15th OSCE Ministerial Council, Madrid, 29 and 30 November 2007

[http://www.osce.org/conferences/mc\\_2007.html](http://www.osce.org/conferences/mc_2007.html)

Madrid Declaration on Environment and Security

[http://www.osce.org/documents/mcs/2007/11/28632\\_en.pdf](http://www.osce.org/documents/mcs/2007/11/28632_en.pdf)

## **OSCE Parliamentary Assembly Agrees to Advance Work on Environmental Security Strategy**

### *Military Implications:*

The militaries of OSCE countries are likely to be invited to comment on the draft strategy. This is an opportunity for the U.S. Army's Strategy on the Environment to be used as a discussion document in this process. Russia and the CIS (Commonwealth of Independent States) were among the first to have a definition of environmental security; hence, military collaboration should be fruitful. If not already done, relevant military personnel should contact the Office of the Coordinator of OSCE Economic and Environmental Activities and the Environment and Security (ENVSEC) Initiative to collaborate on further development of the environmental security strategy and its implementation.

### *Sources:*

Kyiv Declaration of the OSCE Parliamentary Assembly and Resolutions Adopted at the Sixteenth Annual Session; Kyiv, 5 to 9 July 2007

<http://www.oscepa.dk/admin/getbinary.asp?FileID=1733>

Resolution on Environmental Security Strategy

<http://www.oscepa.dk/admin/getbinary.asp?FileID=1733>

Annual Sessions & Declarations

<http://www.oscepa.dk/index.aspx?articleid=+376+376>

## **OSCE-NATO Workshop on Environmental Security in the Mediterranean**

### *Military Implications:*

Military personnel involved in environmental security issues should review the "Water Scarcity, Land Degradation and Desertification in the Mediterranean region - Environment and Security Aspects" background paper for the conference referenced in sources below and seek ways to support their colleagues in the Mediterranean region.

### *Sources:*

Mediterranean countries discuss environmental security at OSCE, NATO workshop

<http://www.osce.org/item/28784.html>

"Water Scarcity, Land Degradation and Desertification in the Mediterranean region - Environment and Security Aspects," Background Paper

<http://www.csic.es/documentos/actividades/cide111207.pdf>

## **Environmental Security Focus of the Nobel Peace Prize for 2007**

### *Military Implications:*

It is likely that this Nobel Peace Prize will focus more political and public attention and action on environmental matters. This presents opportunities to raise awareness of the Army Strategy on the Environment. Military public relations officers should be tasked to explore how to connect this Army strategy with the Nobel Peace Prize, noting efforts to reduce the military environmental footprint, the environmental dimensions in its operations, its role in developing adaptation and mitigation plans, and the inclusion of environment-related factors in conflict prevention strategies.

### *Sources:*

The Nobel Peace Prize 2007

[http://nobelprize.org/nobel\\_prizes/peace/laureates/2007/](http://nobelprize.org/nobel_prizes/peace/laureates/2007/)

Gore shares Nobel Peace Prize with U.N. panel

<http://www.cnn.com/2007/WORLD/europe/10/12/nobel.gore/>

Ban Ki-moon hails Nobel laureates Al Gore, Intergovernmental Panel on Climate Change

<http://www.un.org/apps/news/story.asp?NewsID=24275&Cr=climate&Cr1=change>

Global warming recast as security issue

[http://www.ft.com/cms/s/0/3027a992-78f2-11dc-aaf2-0000779fd2ac.html?nclink\\_check=1](http://www.ft.com/cms/s/0/3027a992-78f2-11dc-aaf2-0000779fd2ac.html?nclink_check=1)

## **UN Establishes the International Panel for Sustainable Resource Management**

### *Military Implications:*

Since environmental security would have to be considered within the broad framework of the IPSRM, it would be wise to begin to explore how those involved in the Army Strategy on the Environment and military personnel with natural resources management responsibilities should communicate with the new organization. Because the next US administration could well choose to become an important member in the IPSRM, there could be opportunities for military scientists to participate on the panel. In any case, the military and its contractors should follow the Panel's work.

### *Sources:*

New Panel must boost resource-efficient growth and innovation, UN Environment Programme says

<http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=521&ArticleID=5700&l=en>

International Panel for Sustainable Resource Management (Resource Panel)

<http://www.unep.fr/pc/sustain/initiatives/resourcepanel/>

## **CONFLICT AND POST-CONFLICT ENVIRONMENTAL SECURITY ISSUES**

### **UN Secretary-General on the International Day for Preventing the Exploitation of the Environment in War and Armed Conflict**

#### *Military Implications:*

Relevant military personnel might use the November 9th International Day for initiating and/or furthering relations with such UN organizations as UNEP and its partners to help find approaches for improved sustainability for displaced communities to prevent re-conflicts.

*Sources:*

Preventing the Exploitation of the Environment in War

[http://www.un.org/depts/dhl/environment\\_war](http://www.un.org/depts/dhl/environment_war)

Massive displacement disrupts economic activities: Ban

[http://timesofindia.indiatimes.com/World/Massive\\_displacement\\_disrupts\\_economic\\_activities\\_Ban/articleshow/2501999.cms](http://timesofindia.indiatimes.com/World/Massive_displacement_disrupts_economic_activities_Ban/articleshow/2501999.cms)

UN Resolution 56/4

<http://daccessdds.un.org/doc/UNDOC/GEN/N01/475/24/IMG/N0147524.pdf?OpenElement>

## **Environmental Aspects of the Darfur Conflict**

### ICC Urged to Consider Environmental Crimes in Darfur Cases

*Military Implications:*

Although making a case based on environmental crime is very difficult under the stipulations of the Rome Statute (see Environmental Crimes in Military Actions and the International Criminal Court (ICC)—UN Perspectives, by the Millennium Project, available from AEPI), the fact that there is pressure to consider it increases the attention given to the environment in conflict situations and contributes to other efforts to change the Rome Statute to better address environment-related actions. Hence, military legal personnel monitoring the evolution of the ICC should keep track of these developments. Likewise, personnel writing and updating regulations need to make themselves aware of these developments in order to incorporate changing philosophies and requirements in training, operations and materiel development guidance at appropriate times. [See also *UNEP Warns No Peace in Sudan without Environmental Management Plan* in June 2007 environmental security report]

*Sources:*

Court Urged to Consider Environmental Crimes

[http://www.iwpr.net/?p=acr&s=f&o=338199&apc\\_state=henh](http://www.iwpr.net/?p=acr&s=f&o=338199&apc_state=henh)

Environmental Crimes in Military Actions and the International Criminal Court (ICC)—UN Perspectives

<http://www.millennium-project.org/millennium/es-icc.html>

### Water Shortage for 2.2 Million in Refugee Camps Could Increase Darfur Conflict

*Military Implications:*

U.N. and military planners involved in the Darfur and similar peacekeeping operations should incorporate environmental and infrastructure dimensions into their strategies and operations and eventually consider alternative relocation of the refugees. Implementation of new technologies for water supply should be contemplated as a priority in peace operations in such conditions. Lessons learned in Darfur need to be heeded in generalized planning guidance for future crises that might occur elsewhere.

*Sources:*

Darfur refugees strain tight water supplies

<http://www.mcclatchydc.com/226/story/19262.html>

New York, 28 August 2007 - Secretary-General's press conference

<http://www.un.org/apps/sg/offthecuff.asp?nid=1060>

## **Disputes over Oil Might Reignite Congo-Uganda Conflict**

### *Military Implications:*

This could be an opportunity for the military to take up the UN Security Council's increased focus on prevention (see Item 1 in this report) by offering collaboration with the UN Resident Representatives in the two countries in cooperation with the African Union to prevent a potential war.

### *Source:*

Do you want to share or to fight?

[http://www.economist.com/research/articlesBySubject/displayStory.cfm?story\\_id=9687573&subjectID=381586&fsrc=nwl&emailauth=%2527%252D5%2527%253EP%255CGJ%2523%2520%2520D%250A](http://www.economist.com/research/articlesBySubject/displayStory.cfm?story_id=9687573&subjectID=381586&fsrc=nwl&emailauth=%2527%252D5%2527%253EP%255CGJ%2523%2520%2520D%250A)

## **Depleted Uranium Environmental Concerns Resurfacing**

### *Military Implications:*

As discourse over the consequences of the use of depleted uranium continues, pressure could mount for new international regulations that would create a clear framework for assessment, consequences, and compensations/liabilities for the responsible countries. The military should ensure that it is prepared to provide reliable information to counter such allegations and continue pursuing R&D for substitutes.

### *Sources:*

"We Are Living Through Another Hiroshima," Iraq Doctor Says

[http://www.opednews.com/articles/genera\\_sherwood\\_071121\\_22we\\_are\\_living\\_throu.htm](http://www.opednews.com/articles/genera_sherwood_071121_22we_are_living_throu.htm)

Attack on Iran would result in India feeling nuked: Moret

<http://www.dnaindia.com/report.asp?newsid=1080179>

Officials to test military for depleted uranium levels

[http://www.qcsunonline.com/news/uranium\\_5331\\_article.html/departement\\_test.html](http://www.qcsunonline.com/news/uranium_5331_article.html/departement_test.html)

Depleted uranium can be detected in urine

[http://www.upi.com/NewsTrack/Health/2007/10/26/depleted\\_uranium\\_can\\_be\\_detected\\_in\\_urine/4838/](http://www.upi.com/NewsTrack/Health/2007/10/26/depleted_uranium_can_be_detected_in_urine/4838/)

## **Negotiations Continue for an International Instrument to Ban Cluster Munitions**

### *Military Implications:*

The military should be prepared for possible requirements to phase out cluster munitions use and to intensify efforts for helping other countries and regions do the same and/or deal with their aftereffects.

### *Sources:*

Press Release: No hope for cluster bomb ban in Geneva but momentum grows for Vienna treaty talks

<http://www.stopclustermunitions.org/news.asp?id=102>

Ban cluster bombs: Red Cross, Mines Action Canada

<http://www.cbc.ca/world/story/2007/11/05/cluster-bombs.html>

Secretary-General calls for treaty banning cluster munitions

<http://www.un.org/apps/news/story.asp?NewsID=24581&Cr=cluster&Cr1=munitions>

CMC media advisory: Vienna Conference

<http://www.stopclustermunitions.org/news.asp?id=103>



## **Reports highlighting the link between environment and security**

### *Military Implications:*

These reports by authoritative organizations are excellent analyses of the link between environmental conditions and conflict, detailing causes, consequences, and suggesting actions. Relevant military personnel should consider reviewing the reports for eventual inputs to conflict prevention planning and should prepare for the potential security challenges triggered or exacerbated by climate change.

### *Sources:*

UNDP *Human Development Report 2007/8*

<http://hdr.undp.org/en/reports/global/hdr2007-8/>

*A Climate of Conflict*

[http://www.international-alert.org/climate\\_change.php](http://www.international-alert.org/climate_change.php)

*The Age of Consequences: The Foreign Policy and National Security Implications of Global Climate Change*

[http://www.csis.org/component/option,com\\_csis\\_pubs/task,view/id,4154/type,1/](http://www.csis.org/component/option,com_csis_pubs/task,view/id,4154/type,1/)

Climate change seen threatening national security

<http://uk.reuters.com/article/environmentNews/idUKN0528470920071106>

## **NATIONAL/REGIONAL ENVIRONMENTAL STRATEGIES AFFECTING MILITARY ACTIVITIES**

### **UNEP and South Korea to Help North Korea's Environmental Management**

#### *Military Implications:*

Military personnel with environmental expertise should seek ways to support this initiative for North-South cooperation.

#### *Source:*

South Korea contributes more than US\$4 million to First Environmental Project between Two Koreas

<http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=521&ArticleID=5710&l=en>

### **Asian New Strategy to Improve Health and Environment**

#### *Military Implications:*

Military personnel with environmental health responsibilities in Southeast and East Asian countries should review the Bangkok Declaration on Environment and Health to see where collaboration is possible, and explore ways of applying the Army's Strategy on the Environment.

#### *Sources:*

Bangkok Declaration calls for coordinated action on environment and health

<http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=516&ArticleID=5652&l=en>

Asian States adopt UN-backed plan to cut millions of deaths due to man-made disasters

<http://www.un.org/apps/news/story.asp?NewsID=23474&Cr=pollution&Cr1=>

## **Climate Change Issues May Have Determined Australian Election**

### *Military Implications:*

The military should assess how potential changes in Australia's environmental policies could affect its operations in the southwest Pacific region.

### *Sources:*

His own boss. Economist.com, Nov 26th 2007

[http://www.economist.com/daily/news/displaystory.cfm?story\\_id=10200246&fsrc=nwl](http://www.economist.com/daily/news/displaystory.cfm?story_id=10200246&fsrc=nwl)

Australia ousts Bush ally, elects Labor Party

[http://www.usatoday.com/news/world/2007-11-24-australia\\_N.htm](http://www.usatoday.com/news/world/2007-11-24-australia_N.htm)

## **Environment and Security Program in the East-Caspian Region**

### *Military Implications:*

CENTCOM and military stationed in the East Caspian region should consider the ENSVEC priorities in their planning and actions, adjust the regional engagement plan accordingly, and also offer support to their counterparts to improve environmental aspects of military operations in the framework of the ENSVEC program.

### *Sources:*

Environment and Security program meeting held Ashgabat

[http://www.turkmenistan.ru/?page\\_id=3&lang\\_id=en&elem\\_id=11050&type=event&sort=date\\_desc](http://www.turkmenistan.ru/?page_id=3&lang_id=en&elem_id=11050&type=event&sort=date_desc)

Environment and Security; Transforming risks into cooperation

<http://www.envsec.org/centasia/index.php>

## **Environmental security among top three priorities in Australia-China talks**

### *Military Implications:*

Since China is a major user of energy and Australia is a major supplier of energy resources (uranium and liquid natural gas) input to and monitoring of the results of these annual talks should provide early indicators of changing emphases on environmental security in the Asian region.

### *Source:*

Canberra, Beijing to hold annual security talks

<http://www.theaustralian.news.com.au/story/0,25197,22365307-21703,00.html>

## **President Putin Cites Environmental Security as Key Criterion for Caspian Energy Projects**

### *Military Implications:*

There are signs that in some cases environmental security could become a political tool to achieve non-environmental objectives, which could create significant tensions (e.g. Russia stopping the natural gas pipeline to Ukraine/Europe because of its alleged environmental impact). The military should increase efforts to identify the areas where environmental issues could develop into security issues, and should work to prevent their escalation to eventual conflict.

### *Sources:*

No Deal at Caspian Summit on Sharing Sea

<http://ap.google.com/article/ALeqM5ihjRIJLEWgmjJgq1JUFXfoSFGX6wD8SAHU9G0>

A summit of postponed problems

<http://en.rian.ru/analysis/20071017/84254518.html>

Caspian Sea leaders sign declaration

[http://www.tehrantimes.com/index\\_View.asp?code=155078](http://www.tehrantimes.com/index_View.asp?code=155078)

Sakhalin issues 'settled' - as Russia takes 50% stake

<http://business.guardian.co.uk/story/0,,1977430,00.html>

## **To Join the EU, Balkan Countries Should Increase Environmental Efforts**

### *Military Implications:*

Military components operating in this region should be prepared for the possibility that these countries might adopt more stringent environmental restrictions, which may not have military exemptions.

### *Sources:*

Environment Protection Key to Balkan EU Path – UNDP

<http://www.planetark.com/dailynewsstory.cfm/newsid/44784/story.htm>

Balkan Vital Graphics: environment without borders

<http://www.grida.no/Newsroom.aspx?m=54&pressReleaseItemID=1082>

## **France Could Add Teeth to the Kyoto Protocol**

### *Military Implications:*

The military should consider the effects of this increased taxation and restrictions on any operations in France and their potential for expansion throughout the EU.

### *Sources:*

Sarkozy Promises Green Revolution for France

<http://www.dw-world.de/dw/article/0,2144,2847015,00.html>

Paris suggests EU tax on imports from non-Kyoto states

<http://euobserver.com/9/25047/?rk=1>

## **UK to Establish an Independent Climate Committee**

### *Military Implications:*

The UK's strong policy with regard to environmental security issues will undoubtedly expand more forcefully in the international arena and also have implications for US-UK military operations that could affect other national military operations and hence military-to-military cooperation.

### *Sources:*

Climate change is like 'World War Three'

<http://www.telegraph.co.uk/earth/main.jhtml?xml=/earth/2007/11/05/eacclimate105.xml>

NATO Advanced Research Workshop 'Energy and Environmental Challenges to Security'

<http://www.rec.org/natoworkshop/index.html>

Gordon Brown, Lord Mayor's Banquet Speech, 12 November 2007

<http://www.number-10.gov.uk/output/Page13736.asp>

## **China May Restructure Environmental Effort**

### *Military Implications:*

Falling water tables and water pollution in China could lead to increasing internal migration causing a variety of socio-economic instability conditions for the foreseeable future, making this a major environmental security issue to address. Relevant military personnel should consider increased cooperation with their Chinese counterparts to offer them and SEPA the benefit of U.S. experience in environmental security efforts.

### *Source:*

China vows to rebalance economy, nurse environment

<http://www.alertnet.org/thenews/newsdesk/PEK288516.htm>

China May Expand Environmental Watchdog Early '08

<http://www.planetark.com/dailynewsstory.cfm/newsid/44818/story.htm>

## **China's Energy Conditions and Policies—White Paper**

### *Military Implications:*

Relevant military personnel should consider increased cooperation with their Chinese counterparts to offer the benefit of U.S. experience in environmental security efforts.

### *Source:*

China report says coal to remain top energy source

<http://afp.google.com/article/ALeqM5jRdR9Nd-GnyWN1FainAfHONr-imA>

China's Energy Conditions and Policies

[http://www.chinadaily.com.cn/china/2007-12/26/content\\_6349803.htm](http://www.chinadaily.com.cn/china/2007-12/26/content_6349803.htm)

China's energy policy puts more emphasis on environment

<http://www.cctv.com/program/bizchina/20071227/102997.shtml>

China's energy policy puts more emphasis on environment (video)

[http://www.cctv.com/video/bizchina/2007/12/bizchina\\_300\\_20071227\\_8.shtml](http://www.cctv.com/video/bizchina/2007/12/bizchina_300_20071227_8.shtml)

## **The Environmental Dimension of Asian Security**

### *Military Implications:*

Military personnel involved with Northeast Asia, should consider reviewing this book for insights into environmental security issues and solutions in that strategically key region.

### *Source:*

*The Environmental Dimension of Asian Security. Conflict and Cooperation over Energy, Resources, and Pollution.* By In-Taek Hyun and Miranda Schreurs. USIP Press Books

<http://bookstore.usip.org/books/BookDetail.aspx?productID=134288>

## **TECHNOLOGICAL BREAKTHROUGHS WITH ENVIRONMENTAL SECURITY IMPLICATIONS**

### **Computer Technology and Robotics**

## **NASA-Developed Model to Help Reduce Famine**

### *Military Implications:*

The military should consider using the NASA-developed model in combination with other conflict-triggering factors for forecasting and eventually preventing conflicts.

*Source:*

NASA Researchers Find Satellite Data Can Warn of Famine

[http://www.nasa.gov/lb/centers/goddard/news/topstory/2007/famine\\_data.html](http://www.nasa.gov/lb/centers/goddard/news/topstory/2007/famine_data.html)

### **Software Package Monitors Buildings' Power**

*Military Implications:*

The military should investigate to determine if this software is more effective than currently used software in reducing the environmental footprint of existing or new military installations.

*Source:*

New Software Helps Gauge Buildings' Energy Use, Emissions

News story: [http://www.greenbiz.com/news/news\\_third.cfm?NewsID=35457](http://www.greenbiz.com/news/news_third.cfm?NewsID=35457)

Company site: <http://s205030653.onlinehome.us/>

### **New Detection and Cleanup Techniques**

#### **Synthetic Biology to Combat Harmful 'Biofilms'**

*Military Implications:*

This synthetic biology achievement opens possibilities for neutralizing the effect of some new biological weapons. Relevant military personnel should follow the development for its potential sanitizing effects and potential for deployment in fire extinguishers-like devices for rapid use.

*Sources:*

Team builds viruses to combat harmful 'biofilms'

<http://www.physorg.com/news102951008.html>

#### **Tiny Cantilevers Detect Contaminants**

*Military Implications:*

The military should follow this development to see if it has possible uses in environmental and force health protection monitoring systems.

*Source:*

Using Nanotechnology to Detect Contaminants in Food and Water

News story: <http://www.azonano.com/news.asp?newsID=4535>

Rapid molecular detection of food- and water-borne diseases

[http://www.sgm.ac.uk/pubs/micro\\_today/pdf/080703.pdf](http://www.sgm.ac.uk/pubs/micro_today/pdf/080703.pdf)

#### **Portable Sensor to Detect Exposure to Chemical or Nerve Agents**

*Military Implications:*

As stated by the researchers working on the project, in addition to timely and more accurate information, the portable sensor will allow rescue workers to better focus on those who are really affected by chemical or biological agents, over those just scared or not needing immediate attention. The military should follow and provide input to the project in order to develop the most field-useful device.

*Source:*

Truly sick or simply scared?

<http://www.pnl.gov/topstory.asp?id=265>

### **Antibody-bearing Gel Can Disinfect Biologically Contaminated Areas**

*Military Implications:*

The military should follow this development and assess its possible use in cleanup after biological or chemical attacks or accidents.

*Sources:*

Anadis receives \$480k Government grant for biohazard“Ectoplasm” project

<http://64.233.169.104/search?q=cache:VUs7GqNm4JQJ:www.anadis.com.au/admin/managedFiles/4/Government%2520grant%2520for%2520biohazard%2520Ectoplasm%2520project.pdf+anadis+ectoplasm&hl=en&ct=clnk&cd=1&gl=us>

Antibody-laden gel can clean up after anthrax attacks

<http://www.newscientist.com/channel/health/mg19526156.500?DCMP=NLC-nletter&nsref=mg19526156.500>

### **Advance in Assessing Metabolites of Diesel Exhaust component 1-nitropyrene in Humans**

*Military Implications:*

Military preventive health organizations should review the latest research literature on this topic to determine how to use the new tool for force health protection. Materiel managers should study the same literature and seek health professional assistance in applying the findings to development, maintenance and training.

*Sources:*

Identification and Quantification of 1-Nitropyrene Metabolites in Human Urine as a Proposed Biomarker for Exposure to Diesel Exhaust

<http://pubs.acs.org/cgi-bin/abstract.cgi/crtoec/2007/20/i07/abs/tx700015q.html> (abstract only; payment or paid membership required for full article)

Measurement of 1-Nitropyrene Metabolites in Human Urine: A Potential Marker for Exposure to Diesel Exhaust (email newsletter)

### **Landmine Detection by Using Ground-penetrating Radar Technique**

*Military Implications:*

The development has been underway for some time. The military should investigate its current status, in order to consider its application to conflict operations and post-conflict environmental cleanup.

*Source:*

Ground-breaking antilandmine radar

<http://www.physorg.com/printnews.php?newsid=107092841>

### **Porous Semiconducting Aerogels Purify Water and Hydrogen**

*Military Implications:*

The military should follow the development of this family of materials to evaluate its usefulness in environmental cleanup systems.



*Source:*

New aerogels could clean contaminated water, purify hydrogen for fuel cells

[http://www.anl.gov/Media\\_Center/News/2007/news070727.html](http://www.anl.gov/Media_Center/News/2007/news070727.html)

### **Millimeter-wave Spectroscopy Provides Environmental Sensing**

*Military Implications:*

The military should investigate this technique for its applications in battlefield management, environmental surveillance and cleanup.

*Source:*

New instrument covertly detects signals from illicit chemicals

<http://www.physorg.com/news108047021.html>

### **New Chemical Helps Protect Burned-over Soil from Erosion**

*Military Implications:*

The military should investigate this material as an aid in environmental restoration after training exercises, conflict, and natural and accidental fires.

*Sources:*

PAM-12 Erosion Granules

<http://www.encap.net/ProductGuide/PAM12ErosionGranules/tabid/79/Default.aspx>

Product Could Heal Soil After Fires

<http://www.physorg.com/news107534416.html>

### **New Technique Promises Ultra-sensitive Biosensors**

*Military Implications*

The military should explore this development for its applicability to environmental surveillance and cleanup systems.

*Source:*

Mass-Producing 3-D Particles

<http://www.technologyreview.com/Nanotech/19786/page1/>

### **EU Launches Mobile Carbon Tracking**

*Military Implications:*

The military should experiment with mobGAS to assess its value in motivating military personnel to reduce emissions.

*Source:*

European Commission scientists launch first mobile application that uses your mobile phone to track your carbon footprint

<http://www.europa.eu/rapid/pressReleasesAction.do?reference=IP/07/1822&format=HTML&aged=0&language=EN&guiLanguage=en>

## **Space Technology**

### **New UN Office Using Space Technology to Assist Mitigation of Disasters**

#### *Military Implications:*

Developing an integrated environmental monitoring capability to provide informed and timely data will considerably improve early warning, disaster management and response capability, and could help mitigate environmental and social consequences induced by natural disasters; and hence, improve environmental security. If not already in process, the military should develop cooperation protocols with UN-SPIDER.

#### *Source:*

UN Office Uses Space Info To Mitigate Disasters

<http://www.scoop.co.nz/stories/WO0711/S00016.htm>

New UN office utilizing space information to mitigate disasters opens in Bonn

<http://www.un.org/apps/news/story.asp?NewsID=24485&Cr=outer&Cr1=space>

## **Technologies that Could Trigger New Forms of Arms Race**

### **Modern Warfare Increasingly Harmful to the Environment**

#### *Military Implications:*

As international discourse on the environmental damages and related restoration costs intensifies, it is likely that there will be increasing pressure for updating laws, assigning liability, and defining redress issues concerning environmental damages in war.

#### *Sources:*

War and the environment; by Sarah DeWeerd, World Watch, Vol.21, no.1, Jan/Feb 2008, Worldwatch Institute (by subscription only)

Modern Warfare Causes Unprecedented Environmental Damage

<http://www.worldwatch.org/node/5544>

### **Accelerating Synthetic Biology Applications Need Better Monitoring and Regulation**

#### *Military Implications:*

In addition to biosafety issues, synthetic biology opens possibilities for new weapons. If not already in process, military forecasters of such weapons should meet with diplomats to establish an agenda to begin the process of creating treaties to better control such futuristic weapons and weapons systems and the effects of their residuals. Because ICT and nano-engineering are continuing to accelerate the pace of synthetic biology, the sooner such international negotiations are begun, the better.

#### *Sources:*

Synthetic Biology 3.0

<http://www.innovationwatch.com/choiceisyours/choiceisyours-2007-07-15.htm>

First Bacterial Genome Transplantation Changes One Species To Another

<http://www.sciencedaily.com/releases/2007/06/070628232413.htm>

Genome Transplantation in Bacteria: Changing One Species to Another

<http://www.sciencemag.org/cgi/content/abstract/1144622>

Scientists Build Bacteria-Killing Organisms From Scratch

<http://blog.wired.com/wiredscience/2007/07/designer-virus-.html>

NBICS and the Convention on Biological diversity (CBD)

<http://politicsofhealth.org/wol/2007-06-30.htm>

Government Oversight Sought for Gene Synthesis

[http://www.nti.org/d\\_newswire/issues/2007\\_7\\_23.html#6805AC84](http://www.nti.org/d_newswire/issues/2007_7_23.html#6805AC84)

DNA synthesis and biological security

[http://www.nature.com/nbt/journal/v25/n6/abs/nbt0607-](http://www.nature.com/nbt/journal/v25/n6/abs/nbt0607-627.html;jsessionid=A7690C7549ADA0D4A2EC6D17EA7BCE2D)

[627.html;jsessionid=A7690C7549ADA0D4A2EC6D17EA7BCE2D](http://www.nature.com/nbt/journal/v25/n6/abs/nbt0607-627.html;jsessionid=A7690C7549ADA0D4A2EC6D17EA7BCE2D) (by subscription only)

## **Promising Environmental-friendly Technologies**

### **New “Nanohybrid” Plastic Is Stronger and More Biodegradable**

*Military Implications:*

The military should consider using the new plastic alternatives where possible in anticipation of increasingly environment-friendly policies and reducing environmental footprints.

*Source:*

'Nanohybrid' Plastic May Expand Use Of Biodegradable Plastic

<http://www.sciencedaily.com/releases/2007/12/071203120115.htm>

'Bioplastic' may become third option to paper or plastic

<http://www.csmonitor.com/2007/1219/p15s01-sten.html>

### **Polymer Dielectric Promises Higher Energy Storage**

*Military Implications:*

The military should follow this development to assess its possible use in power supplies for portable environmental scanning equipment and other high-density energy storage needs in lieu of batteries.

*Source:*

Unique Material May Allow Capacitors to Store More Energy

<http://news.ncsu.edu/releases/2007/July/123.html>

### **Nano-based Solar Cell Material Offers Inexpensive Alternative**

*Military Implications:*

The military should investigate this research for applications from roofing to portable systems.

*Source:*

NJIT Researchers Develop Inexpensive, Easy Process To Produce Solar Panels

[http://www.njit.edu/publicinfo/press\\_releases/release\\_1040.php](http://www.njit.edu/publicinfo/press_releases/release_1040.php)

### **Magnetic Resonance Provides Short-range Power Source**

*Military Implications:*

The military should follow these developments as they proceed toward practical implementation. The wireless transmission has possible applications in power systems for environmental devices, for example, by providing a single central source for multiple units, eliminating the need for

heavy and bulky batteries, or power cords. The body-embedded generator could power individual environment sensors, drug dosers and prosthetic devices.

*Source:*

Cutting the last cord could resonate with our increasingly gadget-dependent lives

<http://www.sciencenews.org/articles/20070721/bob8.asp>

Nanogenerator Could Draw Energy from Human Blood

<http://news.softpedia.com/news/Nanogenerator-Could-Draw-Energy-from-Human-Blood-60580.shtml>

## **Silicon Nanocrystals Promise More Efficient Solar Cells**

### **Synthetic Biology to Produce Hydrocarbon-based Fuels**

#### **Nanotechnology Produces Battery/Capacitor in a Sheet of Paper**

Scientists from the Rensselaer Polytechnic Institute have developed a device that resembles a sheet of paper in all respects, but that can serve as a battery or capacitor. The material is formed from cellulose and carbon nanotubes, and can be soaked with any of a variety of fluids (including sweat or blood) to serve as an electrolyte. It can operate at temperatures between -100 and +300 degrees Fahrenheit and can be printed like paper.

*Military Implications:*

The military should follow these developments for their possible use in more efficient power supplies.

*Sources:*

Silicon Nanocrystals for Superefficient Solar Cells

<http://www.technologyreview.com/Energy/19256>

Making Gasoline from Bacteria

[http://www.technologyreview.com/read\\_article.aspx?id=19128](http://www.technologyreview.com/read_article.aspx?id=19128)

Beyond Batteries: Storing Power in a Sheet of Paper

[http://news.rpi.edu/update.do?artcenterkey=2280&setappvar=page\(1\)](http://news.rpi.edu/update.do?artcenterkey=2280&setappvar=page(1))

## **Space-based Solar Power Has Significant Environmental Security Potential**

*Military Implications:*

Military personnel with energy and environmental security responsibilities should study this report to identify how SBSP could change their operations. Such implications should be transmitted to NSSO, which expects to continue to update this report periodically. The Army Strategy on the Environment calls for leadership in sustainability; SSP furthers energy security sustainability, and sustains the mission with wireless energy transmission for more flexible, mobile, and reliable energy supply and transmission, with a smaller environmental footprint than other energy options. It also reduces vulnerabilities of energy delivery via ground and oceans. Large-scale electricity on demand anywhere in the world will speed post-conflict and post-natural disaster recovery. Large military posts have both power needs and space for safety buffers that might be required for prototype power receiving stations.

*Sources:*

NSSO Report: Space-Based Solar Power: As an Opportunity for Strategic Security

<http://www.nss.org/settlement/ssp/library/final-sbsp-interim-assessment-release-01.pdf>

Power from space? Pentagon likes the idea

<http://www.msnbc.msn.com/id/21253268>

Orbiting solar panels' day may be near

[http://www.latimes.com/news/printedition/asection/la-sci-spacesolar11oct11.1,336119.story?coll=la-news-a\\_section&ctrack=1&cset=true](http://www.latimes.com/news/printedition/asection/la-sci-spacesolar11oct11.1,336119.story?coll=la-news-a_section&ctrack=1&cset=true)

### **Reducing Military Footprint with Solar Energy at 30 Cents per Watt**

#### *Military Implications:*

Military installation management, facility design, materiel development and procurement personnel should consider applications for lower cost solar energy, from building surfaces to mobile and remote energy requirements.

#### *Sources:*

Nanosolar: Power to the people

<http://www.enn.com/energy/article/24430>

Nanosolar Inc. <http://www.nanosolar.com/>

Nanosolar's Breakthrough - Solar Now Cheaper than Coal

<http://www.celsias.com/2007/11/23/nanosolars-breakthrough-technology-solar-now-cheaper-than-coal>

### **Energy-free Glow Material**

#### *Military Implications:*

The military should investigate this material for its energy-saving application to a variety of products from labeling materiel and safety hazards to illuminating watch faces and weapon scopes.

#### *Source:*

A company called MPK is designing a light source that will glow continuously for more than 12 years without any additional energy

<http://www.physorg.com/news116776284.html>

### **Dye-sensitized Solar Cells Offer Shorter Energy Payback Time**

#### *Military Implications:*

The military should investigate this new technology for its possible application to power supplies for portable/mobile tactical and environmental sensing and communication systems.

#### *Source:*

Solar Energy's Red Queen

<http://www.americanscientist.org/template/AssetDetail/assetid/56471>

### **Nanotech Lithium-Ion Battery Material Promises 10× Capacity Increase**

#### *Military Implications*

The military should explore this development for its battery requirements from mobile environmental sensing systems to electric vehicles.

#### *Source:*

Stanford's nanowire battery holds 10 times the charge of existing ones

<http://news-service.stanford.edu/news/2008/january9/nanowire-010908.html>

## **New Biological Discovery Should Bring More Efficient Water Treatment**

### *Military Implications:*

The military might consider this technology for applications in environmentally friendly field and installation water supply systems.

### *Source:*

Natural slime control aids desalination

<http://www.sciencealert.com.au/news/20072410-16490-2.html>

## **B. Preventing or Responding to Environmentally Caused Conflicts**

### **SECURITY IMPLICATIONS OF CLIMATE CHANGE**

## **International Conferences Put Climate Change among Top Security Issues**

### *Military Implications:*

If the military were told that indeed climate change is a threat on a par with terrorism or the Cold War, what changes in the military would be required? Since the environmental and international political trends are moving in this direction, it would be wise to initiate studies to explore options.

### *Sources:*

Climate change called security issue like Cold War

[http://www.enn.com/top\\_stories/article/22093](http://www.enn.com/top_stories/article/22093)

Natural disasters more destructive than wars: Egeland

[http://news.yahoo.com/s/afp/20070828/sc\\_afp/environmentclimate](http://news.yahoo.com/s/afp/20070828/sc_afp/environmentclimate)

Vienna UN conference shows consensus on key building blocks for effective international response to climate change

[http://unfccc.int/files/press/news\\_room/press\\_releases\\_and\\_advisories/application/pdf/20070831\\_vienna\\_closing\\_press\\_release.pdf](http://unfccc.int/files/press/news_room/press_releases_and_advisories/application/pdf/20070831_vienna_closing_press_release.pdf)

## **IISS's Strategic Survey 2007 Warns of Global Security Implications of Climate Change**

### *Military Implications:*

Personnel with environmental security related responsibilities should read this document for new policy and training requirement implications.

### *Sources:*

Strategic Survey 2007

<http://www.iiss.org/publications/strategic-survey-2007>

Global warming impact like "nuclear war" – report

<http://africa.reuters.com/top/news/usnBAN251297.html>

## **GEO-4**

### *Military Implications:*

Military planners should review these reports on a regular basis. The Global Environment Outlook reports provide important indicators of the UN's environmental concerns and policy directions, as well as essential planning information.



*Sources:*

Global Environment Outlook: environment for development (GEO-4)

<http://www.unep.org/geo/geo4/media/index.asp>

Planet's Tougher Problems Persist, UN Report Warns

<http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=519&ArticleID=5688&l=en>

UN Planetary Report Paints Bleak Regional Picture

<http://www.planetark.com/dailynewsstory.cfm/newsid/45012/story.htm>

Humanity's survival at stake: UN

<http://www.thestar.com/sciencetech/Environment/article/270709>

***World in Transition –Climate Change as a Security Risk***

***Six places in the world where climate change could cause political turmoil***

***Climate Change: A New Threat to Middle East Security***

*Military Implications:*

These papers should be reviewed by those military personnel studying potential environmental security hot spots and interventions to prevent conflict.

*Sources:*

World in Transition –Climate Change as a Security Risk (Report PDF)

[http://www.wbgu.de/wbgu\\_jg2007\\_engl.html](http://www.wbgu.de/wbgu_jg2007_engl.html)

Climate Change and Conflict - New Report Weighs the Risks and Pin Points Likely Hotspots

<http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=523&ArticleID=5720&l=en>

Six places in the world where climate change could cause political turmoil

<http://www.csmonitor.com/2007/1206/p14s01-sten.html>

Climate Change: A New Threat to Middle East Security

<http://newsecuritybeat.blogspot.com/2007/12/climate-change-threatens-middle-east.html>

Egypt, Jordan and Palestine threatened by global warming

<http://www.albawaba.com/en/countries/Palestine/220130>

Climate Change Threatens Middle East, Warns Report

<http://newsecuritybeat.blogspot.com/2007/12/climate-change-threatens-middle-east.html>

Middle East: Rising Sea Levels Could Lead To Political Tensions – Report

[http://yubanet.com/artman/publish/article\\_73048.shtml](http://yubanet.com/artman/publish/article_73048.shtml)

**Arctic Debate**

**Arctic Access, Territorial Claims, Energy Resources and Environmental Management**

*Military Implications:*

It is likely that discussions for clear international regulations concerning the Arctic region will increase rapidly, opening the potential for new military roles in the region to ensure the safety of individuals and ecosystems. Relevant military personnel should cooperate with their counterparts in other countries and international organizations in developing timely, adequate national and international regulations and enforcement procedures regarding the Arctic.

*Source:*

Ottawa buying up to 8 Arctic patrol ships

<http://www.cbc.ca/canada/story/2007/07/09/arctic-cda.html>

Arctic patrol ship purchase met with skepticism

<http://www.cbc.ca/canada/north/story/2007/07/10/north-shipreax.html>

The Coming Conflict in the Arctic. Russia and the United States to Square off over Arctic Energy Reserves

<http://www.russiaprofile.org/page.php?pageid=International&articleid=a1184076124>

Russia plants flag under N Pole

<http://news.bbc.co.uk/2/hi/europe/6927395.stm>

### Arctic Debate Intensifies

#### *Military Implications:*

This could be another opportunity to take up the UN Security Council's increased focus on prevention by offering collaboration in design of a multilateral agreement to prevent conflict, and applying the Army's Strategy on the Environment in any military activities that could have environmental impacts on the region.

Sources:

Canada and Denmark join rush to claim Arctic

<http://www.telegraph.co.uk/news/main.jhtml;jsessionid=XBKYMMSKBIQC3QFIQMFSFFWAVCBQ0IV0?xml=/news/2007/08/11/warctic111.xml>

Canada Announces Arctic Base, Port

<http://www.newsvine.com/news/2007/08/10/890132-canada-announces-arctic-base-port>

Drawing lines in melting ice

[http://economist.com/world/international/displaystory.cfm?story\\_id=9660012](http://economist.com/world/international/displaystory.cfm?story_id=9660012)+

Preliminary results of Russian Arctic expedition released

[http://english.pravda.ru/russia/economics/28-08-2007/96385-arctic\\_expedition-0](http://english.pravda.ru/russia/economics/28-08-2007/96385-arctic_expedition-0)

Nations scramble for oil in Arctic

<http://www.newscientist.com/channel/opinion/mg19526172.700-nations-scramble-for-oil-in-arctic.html> (by subscription only; full text available further in this [Appendix](#))

Climate change may open a new route between the Atlantic and Pacific Oceans

<http://clipsyndicate.com/publish/video/381242?wpid=47> (video clip)

Denmark Maps Arctic Ridge in Claim Race

<http://www.guardian.co.uk/worldlatest/story/0,,-6840878,00.html>

Denmark joins race to claim North Pole

<http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2007/08/12/wpole112.xml>

Who resolves Arctic oil disputes?

<http://www.csmonitor.com/2007/0820/p01s02-woeu.html>

Tougher rules urged to protect Arctic

<http://www.ft.com/cms/s/0/4b6e821e-4e74-11dc-85e7-0000779fd2ac.html>

German Foreign Minister Warns Against Exploiting Arctic

<http://www.dw-world.de/dw/article/0,2144,2756813,00.html>

### Canada to Begin Monitoring Traffic in Northwest Passage by mid-2008

#### *Military Implications:*

[Similar to previous articles on the same issue] It is likely that discussions for clear international regulations concerning the Arctic region will increase rapidly, opening the potential for new military roles in the region to ensure the safety of individuals and ecosystems. Relevant military

personnel should cooperate with their counterparts in other countries and international organizations in developing timely, adequate national and international regulations and enforcement procedures regarding the Arctic.

*Sources:*

Canada to monitor water traffic in Northwest Passage

<http://www.cbc.ca/canada/north/story/2007/09/24/technology-passage.html>

The True North ... strong, but whose?

<http://www.hfxnews.ca/index.cfm?sid=65248&sc=93>

Canada to be forced to boost Arctic security, expert says

<http://www.canada.com/ottawacitizen/story.html?id=66c15321-ea0c-4e04-a686-b9ae5f644394&k=64697>

Fight for the Top of the World

<http://www.time.com/time/world/article/0,8599,1663445,00.html>

Satellites witness lowest Arctic ice coverage in history

[http://www.esa.int/esaEO/SEMYTC13J6F\\_planet\\_0.html](http://www.esa.int/esaEO/SEMYTC13J6F_planet_0.html)

## **Disputes over Polar Regions Expands**

*Military Implications:*

[Similar to previous on related issues] It is likely that discussions for clear international regulations concerning the Polar Regions will increase rapidly, opening the potential for new military roles in those regions to ensure the safety of individuals and ecosystems. Relevant military personnel should cooperate with their counterparts in other countries and international organizations in developing timely, adequate national and international regulations and enforcement procedures regarding the Polar Regions.

*Sources:*

Britain Joins Race to Grab Seabeds

<http://www.msnbc.msn.com/id/21351573/>

Britain to claim more than 1m sq km of Antarctica

<http://www.guardian.co.uk/news/2007/oct/17/antarctica.sciencenews>

Green groups condemn UK's claim in Antarctica

<http://www.guardian.co.uk/environment/2007/oct/18/climatechange.fossilfuels>

Steinmeier: Climate Change Growing Threat to Peace

<http://www.planetark.com/dailynewsstory.cfm/newsid/44972/story.htm>

Record 22C temperatures in Arctic heatwave

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## **MIGRATION TRIGGERED BY ENVIRONMENTAL CAUSES**

### **New Strategies Needed to Deal with Global Displacement and Migration**

#### *Military Implications*

[Similar to previous on this issue] It is important that the military community participates in the design of an eventual international framework addressing global displacement and migration; continuously reviews the possible causes of refugee flows and preventive measures; and cooperates with civilian agencies in preparing contingency plans for those circumstances when their assistance is needed.

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#### *Military Implications:*

[Similar for all climate change-related issues] Increasingly more compelling evidence and warnings on climate change amplify international discourse and increase the emergence of international policies trying to tackle the causes and develop strategies to mitigate climate change effects. Hence, the military should be doing its part in reducing greenhouse gas emissions and preparing to help mitigate the human-made and natural catastrophes that could ensue.

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Southern African nations band together to scale up disaster preparedness – UN  
<http://www.un.org/apps/news/story.asp?NewsID=25110&Cr=disaster&Cr1=>

African nations to coordinate fight against natural disasters: UN  
[http://news.yahoo.com/s/afp/20071218/wl\\_africa\\_afp/africasadcdasterun](http://news.yahoo.com/s/afp/20071218/wl_africa_afp/africasadcdasterun)

WMO Hosts First International Symposium on Public Weather Services  
[http://www.wmo.ch/pages/mediacentre/Info%20notes/info\\_40\\_en.html](http://www.wmo.ch/pages/mediacentre/Info%20notes/info_40_en.html)

International Symposium on PWS: A Key to Service Delivery (Geneva, 3- 5 December 2007)  
[http://www.wmo.ch/pages/prog/amp/pwsp/PWS\\_Symposium\\_en.htm](http://www.wmo.ch/pages/prog/amp/pwsp/PWS_Symposium_en.htm)

ITU Global Forum adopts actions to strengthen response in emergencies  
[http://www.itu.int/newsroom/press\\_releases/2007/38.html](http://www.itu.int/newsroom/press_releases/2007/38.html)

## ADAPTATION

### Adaptation Needs and Actions

August 2007:

UN Seeks Measures to Combat Climate Change Crises (Update1)

[http://www.bloomberg.com/apps/news?pid=20601086&sid=a8EAvfD5BgIA&refer=latin\\_america](http://www.bloomberg.com/apps/news?pid=20601086&sid=a8EAvfD5BgIA&refer=latin_america)

*Investment and financial flows relevant to the development of effective and appropriate international response to Climate Chang*

[http://unfccc.int/cooperation\\_and\\_support/financial\\_mechanism/items/4053.php](http://unfccc.int/cooperation_and_support/financial_mechanism/items/4053.php)

September 2007:

Billions Committed for Environment at Clinton Global Initiative

<http://www.ens-newswire.com/ens/sep2007/2007-09-26-05.asp>

Climate change affecting Pakistan's environment: Faisal Saleh

[http://www.dailytimes.com.pk/default.asp?page=2007%5C09%5C26%5Cstory\\_26-9-2007\\_pg7\\_45](http://www.dailytimes.com.pk/default.asp?page=2007%5C09%5C26%5Cstory_26-9-2007_pg7_45)

UN climate change expert stresses dangers of inaction

<http://www.un.org/apps/news/story.asp?NewsID=23936&Cr=climate&Cr1=change>

Fight for the Top of the World

<http://www.time.com/time/world/article/0,8599,1663445,00.html>

Rising sea levels would submerge third of Bangladesh

[http://www.terraviva.com/reports/Rising\\_sea\\_levels\\_would\\_submerge\\_third\\_of\\_Bangladesh\\_999.html](http://www.terraviva.com/reports/Rising_sea_levels_would_submerge_third_of_Bangladesh_999.html)

Tuvalu about to disappear into the ocean

<http://www.enn.com/ecosystems/article/23020>

UN General Assembly—General Debate (25 September - 3 October 2007); Statements and Webcast

<http://www.un.org/webcast/ga/62/>

Pacific Ocean countries take part in UN meeting on tsunami preparations

<http://www.un.org/apps/news/story.asp?NewsID=23834&Cr=tsunami&Cr1=>

Living with climate change. Adaptation strategies needed to build resilience

<http://www.fao.org/newsroom/en/news/2007/1000654/index.html>

Immediate Action Crucial To Tackle Affects Of Global Warming, Un Official Warns

<http://www.un.org/apps/news/story.asp?NewsID=23750&Cr=climate&Cr1=change>

As Droughts Intensify, Water And Soil Management Vital To Ensure Food – UN

<http://www.un.org/apps/news/story.asp?NewsID=23805&Cr=drought&Cr1>

UN conference recommends WMO climate workshop as a model for enhancing knowledge to combat desertification

[http://www.wmo.ch/pages/mediacentre/press\\_releases/pr794\\_e.html](http://www.wmo.ch/pages/mediacentre/press_releases/pr794_e.html)

Living with climate change. Adaptation strategies needed to build resilience

<http://www.fao.org/newsroom/en/news/2007/1000654/index.html>

UN-backed workshop on climate change adaptation fosters policy exchange

<http://www.un.org/apps/news/story.asp?NewsID=23818&Cr=climate&Cr1=change>

BURKINA FASO: Innovation and education needed to head off water war

<http://www.irinnews.org/Report.aspx?ReportId=74308>

Environment: Parliaments Said to be "Weak" in Fighting Desertification

<http://www.ipsnews.net/africa/nota.asp?idnews=39242>

The eighth Conference of the Parties to the United Nations Convention to Combat Desertification (UNCCD COP8) kicked off on Monday in Madrid and will conclude on 14 September.

<http://allafrica.com/stories/200709040686.html>

Annan's aid forum tackles natural disasters

[http://www.swissinfo.org/eng/front/detail/Annan\\_s\\_aid\\_forum\\_tackles\\_natural\\_disasters.html?siteSect=105&sid=8225163&cKey=1190040507000&ty=st](http://www.swissinfo.org/eng/front/detail/Annan_s_aid_forum_tackles_natural_disasters.html?siteSect=105&sid=8225163&cKey=1190040507000&ty=st)

Climate change tops future humanitarian challenges: Annan

[http://afp.google.com/article/ALeqM5jcSVcpfxl\\_Gb8aL1rNmai6Xh63\\_w](http://afp.google.com/article/ALeqM5jcSVcpfxl_Gb8aL1rNmai6Xh63_w)

Annan's humanitarian forum to start work in October

<http://www.iht.com/articles/ap/2007/09/17/europe/EU-GEN-Switzerland-Annans-Forum.php>

#### October 2007

The Big Dry. Prolonged drought threatens Australia's people, wildlife, and economy

<http://www.sciencenews.org/articles/20071027/bob9.asp>

Forecasts predict 'rainfall divide' in Southern Africa

<http://www.scidev.net/News/index.cfm?fuseaction=readNews&itemid=3920&language=1>

Rising seas inch toward Thailand's capital

[http://www.sptimes.com/2007/10/21/Worldandnation/Rising\\_seas\\_inch\\_towa.shtml](http://www.sptimes.com/2007/10/21/Worldandnation/Rising_seas_inch_towa.shtml)

Asian countries learn flood defence

<http://www.scidev.net/News/index.cfm?fuseaction=readNews&itemid=3979&language=1>

Asian disaster management project to expand

<http://www.scidev.net/News/index.cfm?fuseaction=readNews&itemid=3931&language=1>

China to share disaster expertise

<http://www.scidev.net/News/index.cfm?fuseaction=readNews&itemid=3937&language=1>

#### November 2007

Disasters escalating four-fold as climate change hits poor hardest, says Oxfam

[http://www.oxfam.org/en/news/2007/pr071125\\_climate\\_change\\_hits\\_poor\\_hardest](http://www.oxfam.org/en/news/2007/pr071125_climate_change_hits_poor_hardest)

*Climate Alarm Disasters increase as climate change bites*

[http://www.oxfam.org/en/files/bp108\\_climate\\_change\\_alarm\\_0711.pdf/download](http://www.oxfam.org/en/files/bp108_climate_change_alarm_0711.pdf/download)

Yet another calamity. Economist.com, Nov 19th 2007, DELHI

[http://www.economist.com/daily/news/displaystory.cfm?story\\_id=10163828&top\\_story=1](http://www.economist.com/daily/news/displaystory.cfm?story_id=10163828&top_story=1)

Andes water supply in peril, scientists say

<http://www.baltimoresun.com/news/world/bal-te.andeswater25nov25,0,4424633,full.story>

*IPCC Fourth Assessment Report (AR4) Summary for Policymakers*

[http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4\\_syr\\_spm.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf)

UNEP and WMO Panel Puts Final Full Stop Behind Risks and Rewards of Combating Climate Change

<http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=521&ArticleID=5707&I=en>

Climate Change 2007: The Physical Science Basis (PDF)

[http://news.bbc.co.uk/2/shared/bsp/hi/pdfs/02\\_02\\_07\\_climatereport.pdf](http://news.bbc.co.uk/2/shared/bsp/hi/pdfs/02_02_07_climatereport.pdf)



FAO publishes *The State of Food and Agriculture 2007*

<http://www.fao.org/newsroom/en/news/2007/1000698/index.html>

Global food crisis looms as climate change and fuel shortages bite

<http://www.guardian.co.uk/environment/2007/nov/03/food.climatechange>

FAO forecasts continued high cereal prices

<http://www.fao.org/newsroom/en/news/2007/1000697/index.html>

Mr Pachauri's presentation at the IPCC Press Conference

<http://www.ipcc.ch/pdf/presentations/valencia-2007-11/pachauri-17-november-2007.pdf>

Singapore Declaration on Climate Change, Energy and the Environment

<http://www.aseansec.org/21116.htm>

Asia signs 'green region' environment pact

<http://www.forbes.com/markets/feeds/afx/2007/11/21/afx4362934.html>

Joint Declaration of the ASEAN-EU Commemorative Summit, Singapore, 22 November 2007

<http://www.aseansec.org/21120.htm>

#### December 2007

Southern African nations band together to scale up disaster preparedness – UN

<http://www.un.org/apps/news/story.asp?NewsID=25110&Cr=disaster&Cr1=>

African nations to coordinate fight against natural disasters: UN

[http://news.yahoo.com/s/afp/20071218/wl\\_africa\\_afp/africasadcdisasterun](http://news.yahoo.com/s/afp/20071218/wl_africa_afp/africasadcdisasterun)

WMO Hosts First International Symposium on Public Weather Services

[http://www.wmo.ch/pages/mediacentre/Info%20notes/info\\_40\\_en.html](http://www.wmo.ch/pages/mediacentre/Info%20notes/info_40_en.html)

International Symposium on PWS: A Key to Service Delivery (Geneva, 3- 5 December 2007)

[http://www.wmo.ch/pages/prog/amp/pwsp/PWS\\_Symposium\\_en.htm](http://www.wmo.ch/pages/prog/amp/pwsp/PWS_Symposium_en.htm)

ITU Global Forum adopts actions to strengthen response in emergencies

[http://www.itu.int/newsroom/press\\_releases/2007/38.html](http://www.itu.int/newsroom/press_releases/2007/38.html)

Integrating Biodiversity into Climate Change Adaptation Planning

<http://adaptation.cbd.int>

## **EU Climate Change Policy**

### **Asia-Pacific to Increase Responses to Climate Change**

#### *Military Implications:*

Relevant military personnel stationed in these regions should seek opportunities to collaborate with regional leaders in implementing the Army Strategy on the Environment.

#### *Sources:*

Adaptation to climate change: it may be a matter of survival! Stavros Dimas, Member of the European Commission, responsible for environment

<http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/07/457&format=HTML&aged=0&language=EN&guiLanguage=en>

Climate change: Europe must take adaptation measures to lessen impacts of current and future warming

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/979&format=HTML&aged=0&language=EN&guiLanguage=en>

Adapting to Climate Change –Launching a public debate on options for EU Action

<http://ec.europa.eu/environment/climat/pdf/eccp/adapting.pdf>

New Diplomacy: Challenges for Foreign Policy (Rt Hon David Miliband MP, Foreign Secretary)  
<http://www.fco.gov.uk/servlet/Front?pagename=OpenMarket/Xcelerate/ShowPage&c=Page&cid=1007029391647&a=KArticle&aid=1184751108322>

Asian-Pacific countries discuss responses to climate change at UN-backed meeting  
<http://www.un.org/apps/news/story.asp?NewsID=23270&Cr=climate&Cr1=change>

Asia-Pacific Examines Ways to Scale Up Responses to Climate Change  
<http://www.unescap.org/unis/press/2007/jul/g29.asp>

Australia's opposition ties Pacific climate to security  
<http://www.radioaustralia.net.au/news/stories/s1987423.htm>

## **U.S. Climate Change Science Program Progress Assessment**

### *Military Implications:*

Although military assets are probably being shared for this or similar work, it appears that even greater sharing is needed and should be offered.

### *Source:*

Progress of U.S. Climate Change Science Program Evaluated  
<http://www.nationalacademies.org/morenews/20070913.html>

## **ENERGY SECURITY**

### **Trends of Energy Use in IEA Countries**

#### *Military Implications:*

This is a good reference for those responsible for policies to improve military energy efficiencies around the world.

#### *Source:*

*Energy Use in the New Millennium -- Trends in IEA Countries*  
<http://www.iea.org/w/bookshop/add.aspx?id=312>

## **C. Protecting the Environment Due to Its Inherent Moral Value**

### **ENVIRONMENTAL SECURITY-RELATED INTERNATIONAL REGULATIONS THAT HAVE BEEN COMING INTO FORCE SINCE JULY 2007**

#### **EC's WEEE Directive Goes into Effect in UK in July 2007**

##### *Military Implications:*

Military stationed in EU Member States should comply with the directive and make sure that sound e-waste disposal practices are adopted, as appropriate under Status of Forces Agreements.

##### *Sources:*

New obligations for end-of-life IT equipment

<http://www.business4brunch.com/content/view/207/25/>

The IT Chief's Guide to WEEE

[http://greenercomputing.com/reviews\\_third.cfm?NewsID=35442](http://greenercomputing.com/reviews_third.cfm?NewsID=35442)

#### **EU Waste Shipment Legislation Came into Force in July 2007**

##### *Military Implications:*

The regulation on transboundary shipments of waste doesn't seem to have exceptions for the military; hence, relevant military personnel should comply with the new regulation, as appropriate under Status of Forces Agreements.

##### *Sources:*

Environment: new EU waste shipment legislation comes into force today

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/1078&format=HTML&aged=0&language=EN&guiLanguage=en>

Regulation (EC) No 1013/2006 of the European Parliament and of the Council

[http://eur-lex.europa.eu/LexUriServ/site/en/oj/2006/l\\_190/l\\_19020060712en00010098.pdf](http://eur-lex.europa.eu/LexUriServ/site/en/oj/2006/l_190/l_19020060712en00010098.pdf)

Waste shipments

<http://ec.europa.eu/environment/waste/shipments/legis.htm>

#### **Micronesian Nations Sign Coral Reef Protection Document**

##### *Military Implications:*

Activities associated with the coming International Year of the Reef are likely to encourage other countries to accede to the Declaration. Relevant military personnel, especially in the western Pacific, should review the Declaration and consider new actions to help preserve these fragile and internationally valued environmental features. Over-the-shore training and operations are likely to be affected, as awareness and regulatory efforts develop. Joint and Service guidance could eventually require changes.

##### *Sources:*

Three Presidents of Micronesian Nations Sign Reef Check 'International Declaration of Reef Rights' - Pledge to Protect Coral Reefs

[http://www.enn.com/press\\_releases/2153](http://www.enn.com/press_releases/2153)

Reef Check's International Declaration of Reef Rights Receives Presidential Attention

[http://www.reefcheck.org/news/news\\_detail.php?id=252](http://www.reefcheck.org/news/news_detail.php?id=252)

## **UN General Assembly Adopts Global Forest Agreement**

### *Military Implications:*

The military should review the agreement for military implications on land and forests usage, especially during future training missions.

### *Sources:*

Non-legally Binding Instrument on All Types of Forests

[http://www.un.org/esa/forests/pdf/session\\_documents/unff7/UNFF7\\_NLBI\\_draft.pdf](http://www.un.org/esa/forests/pdf/session_documents/unff7/UNFF7_NLBI_draft.pdf)

General Assembly adopts new agreement to protect world's forests

<http://www.un.org/apps/news/story.asp?NewsID=25099&Cr=forest&Cr1=>

Intersessional Activities, Ad-Hoc Expert Groups. To Consider the Content of the Non-legally Binding Instrument

<http://www.un.org/esa/forests/adhoc-nlbi.html>

New Global Forest Agreement Depends on Local Support

<http://www.ens-newswire.com/ens/dec2007/2007-12-27-01.asp>

## **PROPOSED TREATIES AND/OR CHANGES TO EXISTING ONES**

### **Waste Management**

#### **EU Preparing New Directives on Waste Management and Water Quality**

##### *Military Implications:*

Although it is not clear when the new directives will be put forward for adoption, relevant military personnel should study the suggestions, follow its developments, and identify what changes in waste management and water-pollution practices might be required.

##### *Source:*

Environment: Commission welcomes Council agreements

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/970&format=HTML&aged=0&language=EN&guiLanguage=en>

### **Chemical, Biological, and Nuclear Safety**

#### **IAEA to Upgrade International Nuclear Event Scale**

#### **Progress on the Nuclear-Test-Ban Treaty**

#### **Nuclear Disarmament**

#### **IAEA Director's Recommendations to Improve Nuclear Safety**

##### *Military Implication:*

If not already part of the process, relevant military personnel should seek to be involved in the upgrade and revision of the new INES system. It should also be completely informed about the new scales, terminology and strategies put forward by the updated system. Also, the other recent reports might provide input for reducing nuclear terrorism risks.

*Sources:*

Improving the INES Scale

<http://www.iaea.org/NewsCenter/News/2007/ines.html>

International Nuclear Event Scale (INES)

<http://www-ns.iaea.org/tech-areas/emergency/ines.htm>

International Experts Explore Challenge of Abolishing Nuclear Weapons

[http://www.wagingpeace.org/menu/programs/public-events/other/conf\\_challenge\\_2007\\_09\\_08.htm](http://www.wagingpeace.org/menu/programs/public-events/other/conf_challenge_2007_09_08.htm)

Meeting the Challenge of Abolishing Nuclear Weapons

[http://www.wagingpeace.org/articles/2007/09/17\\_krieger\\_meeting\\_the\\_challenge.php](http://www.wagingpeace.org/articles/2007/09/17_krieger_meeting_the_challenge.php)

The Imperative of Revitalizing Nuclear Disarmament

[http://www.wagingpeace.org/articles/2007/08/24\\_imperative\\_of\\_revitalizing.htm](http://www.wagingpeace.org/articles/2007/08/24_imperative_of_revitalizing.htm)

Statement to the Fifty-First Regular Session of the IAEA General Conference 2007 by IAEA Director General Dr. Mohamed ElBaradei

<http://www.iaea.org/NewsCenter/Statements/2007/ebasp2007n014.html>

Secretary-General, in message, calls for rededication to ‘noble work’ of bringing Nuclear-test-ban into force

<http://www.un.org/News/Press/docs/2007/sgsm11157.doc.htm>

Scientific Forum

Global Challenges and the Development of Atomic Energy: The Next 25 Years

<http://www.iaea.org/About/Policy/GC/GC51/ScientificForum>

IAEA Illicit Trafficking Database (ITDB). Fact Sheet

[http://www.iaea.org/NewsCenter/Features/RadSources/PDF/fact\\_figures2006.pdf](http://www.iaea.org/NewsCenter/Features/RadSources/PDF/fact_figures2006.pdf)

## **International Norms Led by IAEA Are Needed to Stop Smuggling of Nuclear Materials and Nuclear Proliferation**

### *Military Implications:*

The military should consider how to make its civilian contractors know the end user of their sales, and require that they should refuse to sell “when in doubt” and report all questionable requests. Relevant military should work with diplomats and IAEA personnel to identify enforcement mechanisms for new international norms to stop smuggling of nuclear-related materials. Amending the EURATOM treaty as suggested could present new opportunities for increasing US-European cooperation on nuclear non-proliferation and radiation protection.

### *Sources:*

A.Q. Khan’s Nuclear Wal-Mart: Out of Business or Under New Management?

<http://foreignaffairs.house.gov/110/36424.pdf>

Highlights of the ISIS Web Site

<http://www.isis-online.org/#highlights>

Roadmap to Responsible Export Controls: Learning from the Past

<http://www.exportcontrols.org>

NATO Advanced Research Workshop ‘Energy and Environmental Challenges to Security’

<http://www.rec.org/natoworkshop/index.html>

The Union’s Energy Policy: A European security challenge. Edit Herczog, member of the European Parliament

<http://www.rec.org/natoworkshop/downloads/session3/herzcog.ppt> (power point presentation)

## **Reports Addressing Nuclear Safety**

### *Military Implication:*

If not already part of the process, relevant military personnel should seek to be involved in the upgrade and revision of the new INES system. It should also be completely informed about the new scales, terminology and strategies put forward by the updated system. Also, the other recent reports might provide input for reducing nuclear terrorism risks.

### *Sources:*

Nuclear Security Report 2007; Measures to Protect Against Nuclear Terrorism

[http://www.iaea.org/About/Policy/GC/GC51/GC51Documents/English/gc51-15\\_en.pdf](http://www.iaea.org/About/Policy/GC/GC51/GC51Documents/English/gc51-15_en.pdf)

Securing the Bomb 2007 [http://www.nti.org/e\\_research/securingthebomb07.pdf](http://www.nti.org/e_research/securingthebomb07.pdf)

Nuclear Terror Remains Global Threat, Harvard Study Reports

[http://www.nti.org/d\\_newswire/issues/2007\\_9\\_27.html#AFD60592](http://www.nti.org/d_newswire/issues/2007_9_27.html#AFD60592)

Report Cites Dangerous Gap in Efforts to Thwart Nuclear Terrorism; Calls for Urgent Global Campaign to Reduce the Risk

[http://www.nti.org/c\\_press/release\\_stb07.pdf](http://www.nti.org/c_press/release_stb07.pdf)

IAEA Illicit Trafficking Database Releases Latest Aggregate Statistics

<http://www.iaea.org/NewsCenter/News/2007/itdb.html>

## **Progress for Enforcing Biological Weapons Convention**

### *Military Implications:*

[Similar to previous on the same issue] Without better international controls, terrorist access to biological weapons seems inevitable. Great progress has been made on bioweapons sensors over the past several years, some of which have been referenced in these monthly reports for AEPI. Relevant military personnel should consider making recommendations at the upcoming intersessional meetings.

### *Sources:*

From Adjacency To Synergy: Meeting of States Parties to Biological Weapons Convention Concludes

[http://www.unog.ch/80256EDD006B9C2E/\(httpNewsByYear\\_en\)/5275A9CC8C5EE6A7C12573B1005C0D28?OpenDocument](http://www.unog.ch/80256EDD006B9C2E/(httpNewsByYear_en)/5275A9CC8C5EE6A7C12573B1005C0D28?OpenDocument)

2007 Meeting of States Parties: 10-14 December 2007

[http://www.opbw.org/new\\_process/msp2007/msp2007.htm](http://www.opbw.org/new_process/msp2007/msp2007.htm)

NAM Concerned At Biological Weapons Convention

<http://www.namnewsnetwork.org/read.php?id=35499>

## **Biotechnology Risk in Africa**

### *Military Implications:*

Military personnel with biosecurity responsibilities should consider contacting relevant African counterparts to help in the creation of standards and treaties to improve the security of biotech labs and applications, and to involve Africans in the international negotiations for biosafety regulations.

### *Source:*

Africa must commit to biosecurity measures

<http://www.scidev.net/Opinions/index.cfm?fuseaction=readOpinions&itemid=654&language=1>



## **Bioviolence; Preventing Biological Terror and Crime**

### *Military Implications:*

Key military personnel with bio-security responsibilities should study this book to identify possible new policy and training requirements.

### *Sources:*

Bioviolence: Preventing Biological Terror and Crime. Excerpt from the book

[http://assets.cambridge.org/97805218/83252/excerpt/9780521883252\\_excerpt.pdf](http://assets.cambridge.org/97805218/83252/excerpt/9780521883252_excerpt.pdf)

Book launch at the Wilson Center

[http://www.wilsoncenter.org/index.cfm?fuseaction=events.event&event\\_id=276519](http://www.wilsoncenter.org/index.cfm?fuseaction=events.event&event_id=276519)

BIOVIOLENCE; Preventing Biological Terror and Crime. Barry Kellman, Depaul University

<http://www.cambridge.org/us/catalogue/catalogue.asp?isbn=9780521709699>

International Weapons Control Center (IWCC)

<http://www.law.depaul.edu/centers%5Finstitutes/iwcc/>

## **Middle East Biosecurity Assessment**

### *Military Implications:*

Military personnel with biosecurity responsibilities should receive these assessments and be asked to comment and suggest military-to-military collaboration potentials with special attention to standards and treaties to improve the security of biotech labs and applications.

### *Sources:*

Biosafety and Biosecurity International 2007

<http://www.biosafetyandbiosecurity-2007.org/>

Biosafety and Biosecurity International Conference 2007 to be held in Abu Dhabi

<http://www.genengnews.com/news/bnitem.aspx?name=22646162&taxid=47>

Analysis: Biothreats in the Middle East

## **Pollution and Greenhouse Gases**

### **Call for Expanding Montreal Protocol on Ozone-Depleting Substances**

#### *Military Implications:*

The Military and its developers and contractors should prepare to comply with the new HCFCs phase-out schedule.

#### **Sources:**

Secretary-General lauds push to hasten phase-out of ozone-depleting compounds

<http://www.un.org/apps/news/story.asp?NewsID=23939&Cr=climate&Cr1=change>

Ozone Treaty's Role in Combating Climate Change Tops Environment Ministers Meeting in Canada

<http://www.ec.gc.ca/default.asp?lang=En&xml=AB3B558A-48EF-4E3B-83FA-BDAA2B7D76AF>

Greenhouse gases could aggravate ozone loss and slow recovery, UN agency says

<http://www.un.org/apps/news/story.asp?NewsID=23827&Cr=ozone&Cr1=>

UN-backed conference ends with push to protect ozone, combat climate change

<http://www.un.org/apps/news/story.asp?NewsID=23918&Cr=climate&Cr1=change>

Ozone Day- 16 September [http://ozone.unep.org/Events/ozone\\_day\\_2007/index.shtml](http://ozone.unep.org/Events/ozone_day_2007/index.shtml)

## **EU Advances the Inclusion of Airlines into the Emissions Trading System to 2010**

### *Military Implications:*

It is not clear at this point if the proposed EU regulation concerns just commercial and private flights, or all. The military should explore impacts on its European operations and consult with allied military forces on the status of military exemptions.

### *Sources:*

MEPs back cuts in air travel CO2 emissions

<http://euobserver.com/9/25134/?rk=1>

EU body adopts strict rules for airline emissions

<http://www.reuters.com/article/governmentFilingsNews/idUSL1365000020071113>

## **EU Advances the Inclusion of Airlines into the Emissions Trading System to 2010**

### *Sources:*

Europe stands firm on ambitious action to cut Aviation Emissions

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/1420&format=HTML&aged=0&language=EN&guiLanguage=en>

Written statement of reservation on behalf of the member states of the European Community (EC) and the other states members of the European Civil Aviation (ECAC) [made at the 36th Assembly of the International Civil Aviation Organization in Montreal, 18-28 September 2007]  
<http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/07/391&format=HTML&aged=0&language=EN&guiLanguage=fr>

Lawmakers say airline emissions have to be cut

<http://www.neurope.eu/articles/78405.php>

MEPs vote to tighten emission limits on aircraft

<http://www.euractiv.com/en/transport/meps-vote-tighten-emission-limits-aircraft/article-167332>

## **European Commission Proposed Binding Legislation for Vehicle Emissions Cuts**

### *Military Implications:*

Although applying only to EU carmakers, such standards may eventually expand to vehicles from outside the EU that operate in the EU area. The military should review its current and future procurements in light of the new regulations.

### *Sources:*

Commission proposal to limit the CO2 emissions from cars to help fight climate change, reduce fuel costs and increase European competitiveness

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/1965&format=HTML&aged=0&language=EN&guiLanguage=en>

EU unveils controversial plans to make cars greener

<http://euobserver.com/9/25367/?rk=1>

The European car industry. Collision course

[http://www.economist.com/business/displaystory.cfm?story\\_id=10329196](http://www.economist.com/business/displaystory.cfm?story_id=10329196)

Brussels spars with Berlin over car emissions

<http://euobserver.com/9/25381/?rk=1>

Cleaner Trucks and Buses to Roll across Europe

<http://www.ens-newswire.com/ens/dec2007/2007-12-27-02.asp>

## **European Parliament Passed the Fine Particles Air Quality Directive**

### *Military Implications:*

The military should assess the effects of the new air quality directive on its operations and explore its role in meeting these new requirements.

### *Sources:*

Environment: Commission welcomes EP vote on the air quality directive

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/1895&format=HTML&aged=0&language=EN&guiLanguage=en>

EU Air Quality Directive: MEPs set maximum concentration of microparticles

<http://www.env-health.org/a/2762>

Progress on the legislative file of the directive on ambient air quality and cleaner air for Europe

[http://ec.europa.eu/prelex/detail\\_dossier\\_real.cfm?CL=en&DosId=193497](http://ec.europa.eu/prelex/detail_dossier_real.cfm?CL=en&DosId=193497)

## **Energy Saving**

## **North American Trilateral Agreement for Energy Security and the Environment**

### *Military implications:*

Military personnel with responsibilities for advanced energy efficiencies with reduced environmental impacts should seek opportunities for collaboration within this agreement.

### *Source:*

North American Energy Ministers Take Further Action on Energy Security and the Environment

[http://www.nrcan.gc.ca/media/newsreleases/2007/200766\\_e.htm](http://www.nrcan.gc.ca/media/newsreleases/2007/200766_e.htm)

## **Post-Kyoto Protocol Negotiations**

## **Bali Roadmap Sets Framework for Post-Kyoto Negotiations**

### *Military Implications:*

The military should review the Bali roadmap for opportunities to apply the Army Strategy on the Environment and to contribute to negotiations on the role of the military on mitigation and adaptation to climate change. As suggested in the September 2007 monthly report, the military should bring together information on all its efforts to reduce climate change and its capacities to anticipate and respond to the effects of climate change (e.g., an executive information system) for continual review and improvement, noting efforts to reduce the military environmental footprint, the environmental dimensions in its operations, its role in developing adaptation and mitigation plans, and the inclusion of environment-related factors in conflict prevention strategies.

### *Sources:*

United Nations Climate Change Conference in Bali

[http://unfccc.int/meetings/cop\\_13/items/4049.php](http://unfccc.int/meetings/cop_13/items/4049.php)

Bali Action Plan

[http://unfccc.int/files/meetings/cop\\_13/application/pdf/cp\\_bali\\_action.pdf](http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf)

Summary of The Thirteenth Conference of Parties to the UN Framework Convention on Climate Change and Third Meeting of Parties to the Kyoto Protocol

<http://www.iisd.ca/vol12/enb12354e.html#REDUCING%20EMISSIONS%20FROM%20DEFORESTATION%20IN%20DEVELOPING%20COUNTRIES>

Secretary-General Ban welcomes climate change breakthrough in Bali

<http://www.un.org/apps/news/story.asp?NewsID=25081&Cr=Climate&Cr1=>

Countries Agree to Write New Climate Action Pact

<http://www.ens-newswire.com/ens/dec2007/2007-12-15-01.asp>

World Mayors and Local Governments Climate Protection Agreement

<http://www.iclei.org/index.php?id=7337>

US Prevails on Climate Draft, Ban Says

[http://www.latimes.com/news/printedition/asection/la-sci-bali13dec13,1,3565669.story?coll=la-news-a\\_section&ctrack=1&csset=true](http://www.latimes.com/news/printedition/asection/la-sci-bali13dec13,1,3565669.story?coll=la-news-a_section&ctrack=1&csset=true)

Gore Exhorts UN Climate Conference to Act Now

<http://www.ens-newswire.com/ens/dec2007/2007-12-13-01.asp>

World Bank Will Pay to Leave Forests Standing

<http://www.ens-newswire.com/ens/dec2007/2007-12-11-01.asp>

So hard to see the wood for the trees

[http://www.economist.com/world/international/displaystory.cfm?story\\_id=10329203](http://www.economist.com/world/international/displaystory.cfm?story_id=10329203)

UN Climate Change Conference represents crossroads, Secretary-General says

<http://www.un.org/apps/news/story.asp?NewsID=25018&Cr=climate&Cr1=change>

EU and US at Loggerheads over Climate Change

<http://euobserver.com/9/25338/?rk=1>

Nobel laureates propose global CO<sub>2</sub> tax

<http://euobserver.com/9/25312/?rk=1>

Some like it cool. *The Economist*, Dec 19th 2007

[http://www.economist.com/opinion/displaystory.cfm?story\\_id=10335267](http://www.economist.com/opinion/displaystory.cfm?story_id=10335267)

## Conferences, Reports

### *Military Implications:*

[Similar for all climate change-related issues] Increasingly more compelling evidence and warnings on climate change amplify international discourse and increase the emergence of international policies trying to tackle the causes and develop strategies to mitigate climate change effects. Hence, the military should be doing its part in reducing greenhouse gas emissions and preparing to help mitigate the human-made and natural catastrophes that could ensue.

### *Sources:*

#### August 2007:

Vienna Climate Change Talks 2007. AWG4 and the Dialogue 4

<http://www.iisd.ca/climate/awg4/> (This site might be slow in opening, owing to many graphics.)

Kyoto Protocol Parties move closer to trading emission allowances

[http://unfccc.int/files/press/news\\_room/press\\_releases\\_and\\_advisories/application/pdf/070830\\_press\\_rel\\_itl.pdf](http://unfccc.int/files/press/news_room/press_releases_and_advisories/application/pdf/070830_press_rel_itl.pdf)

Countries agree on need of global response at UN climate change conference  
<http://www.un.org/apps/news/story.asp?NewsID=23671&Cr=climate&Cr1=>

#### September 2007:

BURKINA FASO: Innovation and education needed to head off water war

<http://www.irinnews.org/Report.aspx?ReportId=74308>

Environment: Parliaments Said to be "Weak" in Fighting Desertification

<http://www.ipsnews.net/africa/nota.asp?idnews=39242>

The eighth Conference of the Parties to the United Nations Convention to Combat Desertification (UNCCD COP8) kicked off on Monday in Madrid and will conclude on 14 September.

<http://allafrica.com/stories/200709040686.html>

Annan's aid forum tackles natural disasters

[http://www.swissinfo.org/eng/front/detail/Annan\\_s\\_aid\\_forum\\_tackles\\_natural\\_disasters.html?siteSect=105&sid=8225163&cKey=1190040507000&ty=st](http://www.swissinfo.org/eng/front/detail/Annan_s_aid_forum_tackles_natural_disasters.html?siteSect=105&sid=8225163&cKey=1190040507000&ty=st)

Climate change tops future humanitarian challenges: Annan

[http://afp.google.com/article/ALeqM5jcSVcpfxl\\_Gb8aL1rNmai6Xh63\\_w](http://afp.google.com/article/ALeqM5jcSVcpfxl_Gb8aL1rNmai6Xh63_w)

Annan's humanitarian forum to start work in October

<http://www.iht.com/articles/ap/2007/09/17/europe/EU-GEN-Switzerland-Annans-Forum.php>

Climate change affecting Pakistan's environment: Faisal Saleh

[http://www.dailytimes.com.pk/default.asp?page=2007%5C09%5C26%5Cstory\\_26-9-2007\\_pg7\\_45](http://www.dailytimes.com.pk/default.asp?page=2007%5C09%5C26%5Cstory_26-9-2007_pg7_45)

#### October 2007

Environment ministers target 2009 climate treaty

<http://www.alertnet.org/thenews/newsdesk/JAK103022.htm>

Contributions to accelerating atmospheric CO2 growth from economic activity, carbon intensity, and efficiency of natural sinks

<http://www.globalcarbonproject.org/activities/AcceleratingAtmosphericCO2.htm>

A clog in the world's carbon dioxide 'sinks'

<http://www.theglobeandmail.com/servlet/story/RTGAM.20071023.wclimate23/BNStory/Science/home>

Carbon sinks failing to keep up with emissions. mongabay.com, October 22, 2007

<http://news.mongabay.com/2007/1022-carbon.html>

The President announces that the Maldives was going to open a resident diplomatic mission in Singapore shortly

[http://www.maldivesinfo.gov.mv/info/include/news.php?id\\_news=854](http://www.maldivesinfo.gov.mv/info/include/news.php?id_news=854)

#### November 2007

The President grants an interview to BBC Radio's World Today programme, on the human dimension of global climate change

[http://www.presidencymaldives.gov.mv/pages/eng\\_news.php?news:4419:1](http://www.presidencymaldives.gov.mv/pages/eng_news.php?news:4419:1)

Radio Interview with Maldives President, Maumoon Abdul Gayoom:

<http://www.presidencymaldives.gov.mv/videos/20071114-01-128kbps.wma> (Windows Media Player)

Climate change conference opens in Maldives

[http://news.xinhuanet.com/english/2007-11/14/content\\_7068743.htm](http://news.xinhuanet.com/english/2007-11/14/content_7068743.htm)

President Gayoom calls on the international community to grant universal recognition to the fact that environmental protection, preservation and security are part of an individual's basic human rights.

[http://www.presidencymaldives.gov.mv/pages/eng\\_news.php?news:4417:1](http://www.presidencymaldives.gov.mv/pages/eng_news.php?news:4417:1)

## **Biological Diversity**

### **UN General Assembly Adopts Global Forest Agreement**

#### *Military Implications:*

The military should review the agreement for military implications on land and forests usage, especially during future training missions.

#### *Sources:*

Non-legally Binding Instrument on All Types of Forests

[http://www.un.org/esa/forests/pdf/session\\_documents/unff7/UNFF7\\_NLBI\\_draft.pdf](http://www.un.org/esa/forests/pdf/session_documents/unff7/UNFF7_NLBI_draft.pdf)

General Assembly adopts new agreement to protect world's forests

<http://www.un.org/apps/news/story.asp?NewsID=25099&Cr=forest&Cr1=>

Intersessional Activities, Ad-Hoc Expert Groups. To Consider the Content of the Non-legally Binding Instrument

<http://www.un.org/esa/forests/adhoc-nlbi.html>

New Global Forest Agreement Depends on Local Support

<http://www.ens-newswire.com/ens/dec2007/2007-12-27-01.asp>

### **UNESCO Added 23 New Reserve Sites in 18 Countries**

#### *Military Implications:*

[Similar to previous on the same issue] The military should keep up-to-date with the list of protected sites and plan any operations near them accordingly. Citing the Army's new Strategy for the Environment, the military should seek new opportunities to participate in dialogues among scientists, politicians, environmental NGOs, and economic decision-makers for improving biodiversity management strategies, as well as in planning its own operations.

#### *Source:*

Twenty-three new biosphere reserves join UNESCO's Man and the Biosphere (MAB) network

<http://portal.unesco.org/en/ev.php->

[URL\\_ID=39480%26URL\\_DO=DO\\_TOPIC%26URL\\_SECTION=201.html](http://portal.unesco.org/en/ev.php-URL_ID=39480%26URL_DO=DO_TOPIC%26URL_SECTION=201.html)

## **Marine Environment**

### **Tougher Law of the Sea Regulations Suggested for Marine Genetic Resources**

#### *Military Implications:*

Although the United States is not Party to the Law of the Sea, it would be wise to keep track of these suggestions and comply where possible, for good stewardship and in case the U.S. does join at a later stage.

#### *Sources:*

United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea

[http://www.un.org/Depts/los/consultative\\_process/consultative\\_process.htm](http://www.un.org/Depts/los/consultative_process/consultative_process.htm)

States Reach Partial Agreement on Marine Genetic Resources at UN Talks

<http://www.newsletterarchive.org/2007/06/30/180929->

[STATES+REACH+PARTIAL+AGREEMENT+ON+MARINE+GENETIC+RESOURCES+AT+UN+TALKS](http://www.newsletterarchive.org/2007/06/30/180929-STATES+REACH+PARTIAL+AGREEMENT+ON+MARINE+GENETIC+RESOURCES+AT+UN+TALKS)



Countries Address Marine Genetic Resources at UN Talks

<http://www.un.org/apps/news/story.asp?NewsID=23037&Cr=Law&Cr1=Sea>

Uncertainty Hindering Management of Marine Genetic Resources, UN Meeting Told

<http://www.un.org/apps/news/story.asp?NewsID=23072&Cr=law&Cr1=sea>

## **Anti-Fouling Systems on Ships Convention to Enter into Force in September 2008**

*Military Implications:*

The US is not Party to the AFS Convention, but, since there are no exemption stipulations, relevant military personnel should review the implications for military vessels' compliance with the Convention's requirements when entering waters of a State Party to the AFS Convention.

*Sources:*

Harmful ships' paint systems to be outlawed as international convention meets entry-into-force criteria

[http://www.imo.org/Newsroom/mainframe.asp?topic\\_id=1472&doc\\_id=8473](http://www.imo.org/Newsroom/mainframe.asp?topic_id=1472&doc_id=8473)

International Convention on the Control of Harmful Anti-fouling Systems on Ships

[http://www.imo.org/Conventions/mainframe.asp?topic\\_id=529](http://www.imo.org/Conventions/mainframe.asp?topic_id=529)

## **Shipping to Face New Regulations to Reduce Air Pollution**

*Military Implications:*

It is likely that the IMO assessment and increasing pressure from environmental groups, and even political agents, will trigger regulations on pollution generated by the shipping industry.

The military should seek to use the most environment-friendly technologies in order to reduce its pollution and also should be prepared for eventual new regulations.

*Sources:*

Shipping must act on air emissions

<http://www.reuters.com/article/tnBasicIndustries-SP/idUSL1286905420070913>

Curbing ship emissions seen needing global rules

<http://uk.reuters.com/article/environmentNews/idUKL0754092020070907>

World Maritime Day 2007. IMO's response to current environmental challenges. A message from the Secretary-General of the International Maritime Organization, Mr. Efthimios E.

Mitropoulos

[http://www.imo.org/includes/blastDataOnly.asp/data\\_id%3D19507/9535.pdf](http://www.imo.org/includes/blastDataOnly.asp/data_id%3D19507/9535.pdf)

World Maritime Day [http://www.imo.org/home.asp?topic\\_id=320](http://www.imo.org/home.asp?topic_id=320)

EPA Hauled into Court over Ship Smokestack Pollution

<http://www.ens-newswire.com/ens/sep2007/2007-09-07-091.asp>

## **Shipping Regulations for Protecting Whales**

*Military Implications:*

Military involved in maritime operations should plan and conduct enhanced vigilance in areas with special ecological features and be prepared to comply with increasing maritime protection regulations.

*Sources:*

Cdn proposal would divert ships from right whale conservation area

<http://cnews.canoe.ca/CNEWS/Canada/2007/09/02/4465625-cp.html>

Shipping Lanes Into Boston Moved To Protect Whales

[http://www.enn.com/top\\_stories/article/6841](http://www.enn.com/top_stories/article/6841)

Petition Seeks Ship Speed Limits in Santa Barbara Channel to Stop Blue Whale Killing

[http://www.enn.com/press\\_releases/2167](http://www.enn.com/press_releases/2167)

## **London Convention Might be Expanded to Include Ocean-based Geoengineering**

### *Military Implications:*

The U.S. is Party to the 1972 London Convention and a signatory of the 1996 Protocol. It is reasonable to speculate that the discourse over ocean-based geoengineering might trigger new regulations or modifications of the existing ones to increase protection of the marine environment from human activities. It would be wise to keep track of these suggestions and apply the precautionary principle to show good stewardship and also to be prepared to comply with eventual new requirements.

### *Sources:*

London Convention Puts Brakes on Ocean Geoengineering

[http://www.etcgroup.org/en/materials/publications.html?pub\\_id=661](http://www.etcgroup.org/en/materials/publications.html?pub_id=661)

Civil Society groups call on London Convention to halt marine dumping geoengineering experiments

[http://www.etcgroup.org/en/materials/publications.html?pub\\_id=660](http://www.etcgroup.org/en/materials/publications.html?pub_id=660)

Urea 'climate solution' may backfire

<http://abc.net.au/science/news/stories/2007/2085584.htm?tech>

Global Forum Sets Out Program to Save Marine Environment

<http://www.arabnews.com/?page=1&section=0&article=103055&d=1&m=11&y=2007&pix=kingdom.jpg&category=Kingdom>

## **Micronesian Nations Sign Coral Reef Protection Document**

### *Military Implications:*

Activities associated with the coming International Year of the Reef are likely to encourage other countries to accede to the Declaration. Relevant military personnel, especially in the western Pacific, should review the Declaration and consider new actions to help preserve these fragile and internationally valued environmental features. Over-the-shore training and operations are likely to be affected, as awareness and regulatory efforts develop. Joint and Service guidance could eventually require changes.

### *Sources:*

Three Presidents of Micronesian Nations Sign Reef Check 'International Declaration of Reef Rights' - Pledge to Protect Coral Reefs

[http://www.enn.com/press\\_releases/2153](http://www.enn.com/press_releases/2153)

Reef Check's International Declaration of Reef Rights Receives Presidential Attention

[http://www.reefcheck.org/news/news\\_detail.php?id=252](http://www.reefcheck.org/news/news_detail.php?id=252)

## **Baltic Ministers Recommend Additions to Baltic Sea Action Plan**

### *Military Implications:*

Military representatives should follow these developments to assess their possible effect on operations in the Baltic region.

### *Sources:*

Baltic ministers call for ambitious Baltic plan

[http://www.planet2025news.net/ntext.rxml?id=4909&photo=Baltic Sea Acton Plan](http://www.planet2025news.net/ntext.rxml?id=4909&photo=Baltic+Sea+Acton+Plan)  
[http://www.helcom.fi/press\\_office/news\\_helcom/en\\_GB/HODS17Outcome1/](http://www.helcom.fi/press_office/news_helcom/en_GB/HODS17Outcome1/)

## **EU Integrated Maritime Policy**

### *Military Implications:*

Military and civilian contractors with marine resources should review the EU Integrated Maritime Policy for eventual implications for its activities in the region.

### *Source:*

EC unveils new EU maritime policy  
[http://www.esa.int/esaEO/SEM6DE2PL7F\\_environment\\_0.html](http://www.esa.int/esaEO/SEM6DE2PL7F_environment_0.html)

## **European Parliament Passed the Marine Strategy Directive**

### *Military Implications:*

Military personnel with environmental responsibilities should review the directive to identify ways to appropriately cooperate with the EU states in implementing the new directive. Although the directive's power is limited to EU waters, elements of the directive could eventually be adopted in other regions of the world.

### *Sources:*

A Marine Strategy to save Europe's seas and oceans  
[http://ec.europa.eu/environment/water/marine/index\\_en.htm](http://ec.europa.eu/environment/water/marine/index_en.htm)  
Environment: Commission welcomes EP vote on the Marine Strategy Directive  
<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/1894&format=HTML&aged=0&language=EN&guiLanguage=en>

## **Transport Canada Proposes New Vessel Operation Regulations**

### *Military Implications:*

Although the proposed Vessel Operation Restriction Regulations concern just commercial and recreational navigation, considering the extent of waterways common to U.S. and Canada, relevant military personnel should review the regulations and consider providing comments to ensure that the Regulations do not impede future U.S. military operations. Also, the military should instruct its contractors to review the new regulations to assure compliance.

### *Source:*

Transport Canada Proposes Vessel Operation Restriction Regulations  
<http://www.tc.gc.ca/mediaroom/releases/nat/2007/07-h156e.htm>

## **Heavy Metals**

### **Call for Global Ban on Lead-based Paints**

#### *Military Implications:*

It is likely that a binding instrument on lead will emerge – as on mercury [See Progress on Global Mercury Ban in February 2007 environmental security report] and as the Restriction of Hazardous Substances (RoHS) Directive in the EU. For personnel and dependent preventive

health reasons, as well as in preparation for compliance with eventual international regulation, the military should consider eliminating—where possible—the use of heavy metals in paints.

*Sources:*

Scientists Call For Global Ban on Lead-Based Paints

<http://www.ens-newswire.com/ens/sep2007/2007-09-27-03.asp>

Consumers: Chinese toys containing lead from Fisher Price recalled in Europe

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/1217&format=HTML&aged=0&language=EN&guiLanguage=en>

US recalls more Chinese-made toys; lead paint mars bobble heads

[http://ca.news.yahoo.com/s/afp/071025/usa/us\\_china\\_company\\_consumer\\_toys\\_recall\\_mattel\\_1](http://ca.news.yahoo.com/s/afp/071025/usa/us_china_company_consumer_toys_recall_mattel_1)

China governance system faulted in U.S. toy debate

<http://www.reuters.com/article/domesticNews/idUSN1221109720070912>

Agenda item 8: Heavy Metals: need for further global action? The Budapest Statement on Mercury, Lead and Cadmium

[http://www.chem.unep.ch/mercury/GC24/HeavyMetalsBudapestStatement290906\\_revised\\_3.pdf](http://www.chem.unep.ch/mercury/GC24/HeavyMetalsBudapestStatement290906_revised_3.pdf)

## **IMPROVED COMPLIANCE WITH ENVIRONMENTAL REGULATIONS**

### **Calendar with Environmental Deadlines Compliance**

*Military Implications:*

Military personnel with environmental reporting responsibility, as well as Army contractors, should consider ordering the free calendar for its extremely useful functionality in helping achieve and maintain compliance with environmental regulations.

*Sources:*

New Calendar Ends Hunt for Environmental Deadlines

<http://www.emediawire.com/releases/2007/9/emw553751.htm>

Compliance Calendar 2008 [http://www.ercweb.com/docs/compliance\\_calendar.pdf](http://www.ercweb.com/docs/compliance_calendar.pdf)

### **IAEA to Improve Nuclear Security in 35 Countries**

*Military Implications:*

Military personnel with nuclear security responsibility might consider offering collaboration and know-how support for the new IAEA nuclear safety programs.

*Source:*

Nuclear Security in Africa Gets €7 Million Boost

<http://www.iaea.org/NewsCenter/News/2007/nucalsecafrica.html>

### **Problems with Destruction of Chemical Weapons and Potential Proliferation**

*Military Implications:*

[Similar to previous on the same issue] The need to speed chemical weapons destruction should be raised on the international agenda. New efforts are needed. The state of current and potential weaponizable chemicals and of chemical plants should continue to be reviewed in light of possible violations of the CWC or of eventual amendments to the CWC. Those with responsibilities in this area should consider new ways to speed international compliance and improve efficiency of the CWC regulations.

*Sources:*

Chemical Weapons' Convention Deadline of 2012 for Destruction of Remaining Chemical Weapons Stockpiles 'Enormous Challenge', First Committee Told

<http://www.un.org/News/Press/docs/2007/gadis3348.doc.htm>

1-2 November: A global convention to ban chemical weapons

<http://www.cefic.be/Templates/shwNewsFull.asp?HID=1&NSID=662&P=1&NID=1>

EU Presidency Statement - United Nations 1st Committee: Other Weapons of Mass Destruction

[http://www.europa-eu-un.org/articles/en/article\\_7424\\_en.htm](http://www.europa-eu-un.org/articles/en/article_7424_en.htm)

## **Global Health Security Initiative Upgrades Its Strategic Policy Process**

### *Military Implications:*

If not already done, relevant military personnel should consider collaboration with the Global Health Security Initiative to provide input on possible threats and assistance in building an effective response capacity, as well as help for nations to develop capacity to identify emerging threats and coordinate actions to address them. Emerging issue identification is an important element in the decision.

### *Source:*

International Health Ministers Plan for Global Preparedness

<http://usinfo.state.gov/xarchives/display.html?p=washfile-english&y=2007&m=November&x=20071107122140lcniirellep3.269595e-02>

## **EC Enforces Compliance of National Legislation with EU Environmental Regulations**

### *Military Implications:*

EC efforts to enforce environmental regulations will trigger further changes in EU Member States' national legislation. Military stationed in the EU countries should increase vigilance in compliance with EU environmental regulations.

### *Sources:*

Ireland: Commission to bring environmental impact assessment case to the European Court of Justice

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/1524&format=HTML&aged=0&language=EN&guiLanguage=en>

United Kingdom: Commission takes legal action for non-compliance with Court decisions

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/1531&format=HTML&aged=0&language=EN&guiLanguage=en>

Waste water treatment: Commission gives Luxembourg final warning, seeks clarifications from Belgium

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/1533&format=HTML&aged=0&language=EN&guiLanguage=en>

Major industrial accidents: Commission continues infringement proceedings against 12 Member States over failure to adopt emergency plans for chemical plants

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/1534&format=HTML&aged=0&language=EN&guiLanguage=en>

Air pollution: Commission takes action over levels of sulphur dioxide and PM10 in member states

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/1537&format=HTML&aged=0&language=EN&guiLanguage=en>

Waste: Commission starts legal action against eight Member States over electronic waste and hazardous substances

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/1513&format=HTML&aged=0&language=EN&guiLanguage=en>

## **China's Emergency Response Law to Punish Falsifying Environmental Information**

### *Military Implications:*

Environmental disasters (accidental or natural) could trigger large-scale socio-economic instability with possible serious security implications. Relevant military and diplomatic personnel should pre-establish protocols to increase cooperation with their Chinese counterparts on exchange of environmental information, particularly regarding such questions as: If non-Chinese military satellite photography of Chinese environmental conditions contradict public statements, should these images be released and address the spirit of the Emergency Response law? If so, how should they be released?

### *Source:*

New law to ban falsifying information on accidents, disasters

<http://english.people.com.cn/90001/90776/6294422.html>

## **NEW STANDARDS WITH IMPLICATIONS FOR ENVIRONMENTAL SECURITY**

### **New ISO Standard on Sustainable Building**

#### *Military Implications:*

ISO 21930:2007 is primarily intended for use in business-to-business communication. Hence the military should encourage its contractors to use it and also examine the impact that this new standard will have on the specification and procurement of military construction.

#### *Sources:*

ISO Creates Standard for Sustainable Building

[http://www.greenerbuildings.com/news\\_detail.cfm?NewsID=36364](http://www.greenerbuildings.com/news_detail.cfm?NewsID=36364)

ISO 21930:2007—Sustainability in building construction -- Environmental declaration of building products

[http://www.iso.org/iso/catalogue\\_detail?csnumber=40435](http://www.iso.org/iso/catalogue_detail?csnumber=40435)

## **SAFETY ISSUES**

### **Pandemics and Other Health Issues**

### **WHO Report 2007 Addresses Global Health Security Threats**

#### *Military Implications:*

The report is a good source for understanding and acting on possible global health threats; and hence should be studied by relevant military personnel.

#### *Sources:*

The world health report 2007 - A safer future: global public health security in the 21st century

<http://www.who.int/whr/2007/en/index.html>



Feathered fiends. Economist.com, Aug 28th 2007

[http://www.economist.com/daily/news/displaystory.cfm?story\\_id=9688994&fsrc=nwl](http://www.economist.com/daily/news/displaystory.cfm?story_id=9688994&fsrc=nwl)

## **Potential Health Threats Of Some New Technologies**

### **Nanotechnology**

#### *Military Implications:*

Military personnel concerned with nanotech issues should review the information generated by these activities to improve military and contractor practices, as well as to assist and cooperate with the organizations working on those issues for enriching their studies.

#### *Sources:*

##### July 2007:

Entry point to the survey (managed via Sinapse(r) communication system)

[http://ec.europa.eu/sinapse/sinapse/index.cfm?fuseaction=login.guestform&redirect=cmtypubdischome.home&CMTY\\_ID=4E10DF9B-C446-4B22-214E55DE322F72D9&cmt\\_y\\_disc\\_id=9C2891B3-D043-41F9-2DD3F3E6174CBA7A&request=1](http://ec.europa.eu/sinapse/sinapse/index.cfm?fuseaction=login.guestform&redirect=cmtypubdischome.home&CMTY_ID=4E10DF9B-C446-4B22-214E55DE322F72D9&cmt_y_disc_id=9C2891B3-D043-41F9-2DD3F3E6174CBA7A&request=1)

Responsible nanotechnology code for business to be developed

<http://www.nanowerk.com/news/newsid=2252.php>

H.R.3235. Title: To ensure the development and responsible stewardship of nanotechnology.

<http://thomas.loc.gov/cgi-bin/bdquery/z?d110:HR03235:@@@T>

Pollution Prevention through Nanotechnology Conference: September 25-26, 2007

<http://www.epa.gov/oppt/nano/nano-confinfo.htm>

##### August 2007

Environment Directorate. Joint meeting of the chemicals committee and the working party on chemicals, pesticides and biotechnology current developments/ activities on the safety of manufactured nanomaterials/ nanotechnologies

[http://appli1.oecd.org/olis/2007doc.nsf/linkto/env-jm-mono\(2007\)16](http://appli1.oecd.org/olis/2007doc.nsf/linkto/env-jm-mono(2007)16)

Meeting website: <http://www.epa.gov/oppt/nano/mc-mtginfinfo.htm>

Nanoscale Materials Stewardship Program

<http://www.epa.gov/oppt/nano/index.htm#stewardship>

Helping the carbon nanotube industry avoid mega-mistakes of the past

<http://www.physorg.com/news106894749.html>

New Substances Program Advisory Note 2007-06. Requirements for nanomaterials under the New Substances Notification Regulations (Chemicals and Polymers)

[http://www.ec.gc.ca/substances/nsb/eng/a200706\\_e.shtml](http://www.ec.gc.ca/substances/nsb/eng/a200706_e.shtml)

*Democratic technologies?* The final report of the Nanotechnology Engagement Group (NEG)

[http://83.223.102.125/involvenew/mt/archives/blog\\_37/Democratic%20Technologies.pdf](http://83.223.102.125/involvenew/mt/archives/blog_37/Democratic%20Technologies.pdf)

##### September 2007

REFNANO: The UK-led initiative on Reference Materials for Nanotechnology

<http://www.safenano.org/REFNANOSHFeature.aspx>

REFNANO: Reference materials for engineered nanoparticle toxicology and metrology

<http://www.safenano.org/Uploads/REFNANOReport.pdf>

Prioritization of Environmental, Health, And Safety Research Needs For Engineered Nanoscale Materials; an Interim Document for Public Comment

[www.nano.gov/Prioritization\\_EHS\\_Research\\_Needs\\_Engineered\\_Nanoscale\\_Materials.pdf](http://www.nano.gov/Prioritization_EHS_Research_Needs_Engineered_Nanoscale_Materials.pdf)

Lack of Government Risk Research Strategy Jeopardizes Success of Technology

[www.nanotechproject.org/136](http://www.nanotechproject.org/136)

October 2007

UK Government Nanotechnology Policy Workshop for Industry

<http://www.euronanotrade.com/index.php?option=content&task=view&id=631&Itemid=30>

BSI New Publications. Nine documents for nanotechnology terminology and guidance for UK industry are due to be published by BSI British Standards.

<http://www.bsi->

[global.com/upload/Standards%20&%20Publications/Nanotechnologies/Nanotechnology%20flyer.pdf](http://www.bsi-global.com/upload/Standards%20&%20Publications/Nanotechnologies/Nanotechnology%20flyer.pdf)

India 'must regulate nanotechnology' urgently

<http://www.scidev.net/News/index.cfm?fuseaction=readNews&itemid=3967&language=1>

November 2007

*Climate Alarm Disasters increase as climate change bites*

[http://www.oxfam.org/en/files/bp108\\_climate\\_change\\_alarm\\_0711.pdf/download](http://www.oxfam.org/en/files/bp108_climate_change_alarm_0711.pdf/download)

Yet another calamity. Economist.com, Nov 19th 2007, DELHI

[http://www.economist.com/daily/news/displaystory.cfm?story\\_id=10163828&top\\_story=1](http://www.economist.com/daily/news/displaystory.cfm?story_id=10163828&top_story=1)

Andes water supply in peril, scientists say

<http://www.baltimoresun.com/news/world/bal-te.andeswater25nov25,0,4424633.full.story>

Coast villages to be sacrificed to the sea

<http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2007/11/11/nflood111.xml>

An Alaskan island is losing ground

<http://www.latimes.com/news/nationworld/nation/la-sci-kivalina25nov25,0,4146460.full.story>

*IPCC Fourth Assessment Report (AR4) Summary for Policymakers*

[http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4\\_syr\\_spm.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf)

Singapore Declaration on Climate Change, Energy and the Environment

<http://www.aseansec.org/21116.htm>

Joint Declaration of the ASEAN-EU Commemorative Summit, Singapore, 22 November 2007

<http://www.aseansec.org/21120.htm>

The President grants an interview to BBC Radio's World Today programme, on the human dimension of global climate change

[http://www.presidencymaldives.gov.mv/pages/eng\\_news.php?news:4419:1](http://www.presidencymaldives.gov.mv/pages/eng_news.php?news:4419:1)

Radio Interview with Maldives President, Maumoon Abdul Gayoom:

<http://www.presidencymaldives.gov.mv/videos/20071114-01-128kbps.wma> (Windows Media Player)

Climate change conference opens in Maldives

[http://news.xinhuanet.com/english/2007-11/14/content\\_7068743.htm](http://news.xinhuanet.com/english/2007-11/14/content_7068743.htm)

December 2007

First nanotechnology genotoxicity tests find that carbon nanotubes could damage DNA

<http://www.nanowerk.com/spotlight/spotid=3632.php>

DNA Damage Induced by Multiwalled Carbon Nanotubes in Mouse Embryonic Stem Cells

<http://pubs.acs.org/cgi-bin/abstract.cgi/nalefd/2007/7/i12/abs/nl071303v.html>

Nanotechnology & the Media: The Inside Story. Tuesday December 18, 2007

[http://www.wilsoncenter.org/index.cfm?fuseaction=events.event&event\\_id=343009#](http://www.wilsoncenter.org/index.cfm?fuseaction=events.event&event_id=343009#)

## **Chemicals and Biotechnology**

### Possible Risk with Bisphenol A Receiving Increased Attention

#### *Military Implications:*

Considering possible future restrictive regulation of this compound, the military should closely follow these investigations, review BPA usage in military materiel, and consider making plans for its replacement.

#### *Source:*

Peril in plastic?

<http://www.baltimoresun.com/news/opinion/ideas/bal-id.bpa23dec23,0,894641.story>

## **POLLUTION ISSUES**

### **Human Ecological Footprint Increasing Each Year**

#### *Military Implications:*

The military should increase efforts to reduce its ecological footprint and consider the creation of indicators to show progress. Use of these indicators would materially assist long-range planning for force management and possible conflict outbreaks.

#### *Sources:*

October 6 is Ecological Debt Day

[http://www.footprintnetwork.org/gfn\\_sub.php?content=overshoot](http://www.footprintnetwork.org/gfn_sub.php?content=overshoot)

World moves into the ecological red

<http://www.enn.com/ecosystems/article/23676>

World failing on sustainable development

<http://environment.newscientist.com/channel/earth/mg19626243.100;jsessionid=HCBMNDHLH>

[PFG](#) (abstract; full article by subscription only)

### **Demographics and Destiny: Trends We Need to Understand in the 21st Century**

#### *Military Implications:*

These points should be included in any global assessment by military personnel concerned with demographic trends as they affect force planning.

#### *Source:*

Demographics and Destiny: Trends We Need to Understand in the 21st Century. National Strategy Forum Volume 16, Issue 4 (Fall 2007)

<http://www.nationalstrategy.com/Programs/NationalStrategyForumReview/CurrentNSFRIssueFall2007V16Issue4/Fall2007NSFRDemographicsandDestiny/tabid/104/Default.aspx>

## Asia's Progress Jeopardized by Environmental Degradation

### *Military Implications:*

The military should look for opportunities to collaborate with counterparts in addressing the Millennium Development Goals.

### *Sources:*

"The Millennium Development Goals: Progress in Asia and the Pacific 2007"

<http://www.adb.org/Documents/Reports/MDG-Update-2007/MDG-Update-2007.pdf>

Asia's Growth can Provide Economic, Social Benefits to All - Joint MDG Report

<http://www.adb.org/Media/Articles/2007/12186-growing-asia-economies/default.asp>

## Bottled Water Becomes Target of Environmentalists

### *Military Implications:*

R & D to create alternatives to shipping massive quantities of bottled water in military deployments should be sought. Logistic plans and contracts for bottled water purchases should be reviewed for flexibility to be revised in the event restrictions spread. Necessity versus simple convenience data that might be needed for appeals should be accumulated for use in appeals.

### *Source:*

Bottled Water Boycotts. Earth Policy Institute. Plan B Update, December 7, 2007

<http://www.earthpolicy.org/Updates/2007/Update68.htm>

Chicago plans bottled water tax

<http://www.freep.com/apps/pbcs.dll/article?AID=/20071228/NEWS07/712280392/1009>

## CLIMATE CHANGE

### *Military Implications:*

[Similar for all climate change-related issues] Increasingly more compelling evidence and warnings on climate change amplify international discourse and increase the emergence of international policies trying to tackle the causes and develop strategies to mitigate climate change effects. Flooding of littoral zones and desertification are likely to stimulate socio-economic instability and environmental refugee movements - both enhancing physical conflict potential in many parts of the globe.

### *Sources:*

#### *July 2007:*

Glaciers Dominate Eustatic Sea-Level Rise in the 21st Century

<http://www.sciencemag.org/cgi/content/abstract/1143906> (abstract; full text by subscription only)

<http://www.sciencemag.org/cgi/content/full/1143906/DC1> (supporting online material)

Glaciers and Ice Caps Quickly Melting Into the Seas

<http://www.ens-newswire.com/ens/jul2007/2007-07-20-03.asp>

Glacial melting poses potentially costly problems for Peru and Bolivia

[http://www.economist.com/world/la/displaystory.cfm?story\\_id=9481517](http://www.economist.com/world/la/displaystory.cfm?story_id=9481517)

Konrad Steffen: The Global Warming Prophet

<http://www.popsoci.com/popsoci/environment/6661e3568cc83110vgnvcm1000004eecbccdrd.html>

Warming of glaciers threatens millions in China

<http://www.sfgate.com/cgi-bin/article.cgi?file=/c/a/2007/08/01/MN2VRAKIH2.DTL>

United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea  
[http://www.un.org/Depts/los/consultative\\_process/consultative\\_process.htm](http://www.un.org/Depts/los/consultative_process/consultative_process.htm)  
States Reach Partial Agreement on Marine Genetic Resources at UN Talks  
<http://www.un.org/apps/news/story.asp?NewsID=23102&Cr=law&Cr1=sea>  
Asia-Pacific Examines Ways to Scale Up Responses to Climate Change  
<http://www.unescap.org/unis/press/2007/jul/g29.asp>

#### August 2007

The ISDR urges every country to implement the Hyogo Framework for action to reduce climate-related risks Disaster risk reduction is not an option; it is an urgent priority  
<http://www.unisdr.org/eng/media-room/press-release/2007/pr-2007-10-hfa.pdf>

In face of devastating Asian floods disaster risk reduction is urgent priority – UN  
<http://www.un.org/apps/news/story.asp?NewsID=23472&Cr=flood&Cr1=>

Tougher rules urged to protect Arctic

<http://www.ft.com/cms/s/0/4b6e821e-4e74-11dc-85e7-0000779fd2ac.html>

Climate flooding risk 'misjudged'

<http://news.bbc.co.uk/2/hi/science/nature/6969122.stm>

Long-Term Efforts Needed for South Asian Flood Recovery, Says UN Agency

<http://www.un.org/apps/news/story.asp?NewsID=23463&Cr=flood&Cr1=>

Press Conference by UN Deputy Emergency Relief Coordinator on Recent Floods in South Asia

[http://www.un.org/News/briefings/docs//2007/070809\\_Wahlstrom.doc.htm](http://www.un.org/News/briefings/docs//2007/070809_Wahlstrom.doc.htm)

Ice cap meltdown to cause 22ft floods

<http://www.telegraph.co.uk/earth/main.jhtml?xml=/earth/2007/08/16/eaice116.xml>

Flooding Affecting Millions

<http://allafrica.com/stories/printable/200708220836.html>

19 million are made homeless after monsoon deluges India

<http://news.scotsman.com/international.cfm?id=1212122007>

Leaf 'sweat glands' to worsen future flooding

<http://environment.newscientist.com/article/dn12559-leaf-sweat-glands-to-worsen-future-flooding.html>

Islands emerge as Arctic ice shrinks to record low

<http://www.reuters.com/article/topNews/idUSL2069726720070821?feedType=RSS&feedName=topNews&pageNumber=2>

Rising sea threatens China's south: report

<http://www.terraviva.com/2007/070830061011.swmxva5e.html>

Global warming threatens Egypt's Nile Delta

[http://www.usatoday.com/news/world/2007-08-23-egypt-nile-threat\\_N.htm](http://www.usatoday.com/news/world/2007-08-23-egypt-nile-threat_N.htm)

UN Seeks Measures to Combat Climate Change Crises (Update1)

[http://www.bloomberg.com/apps/news?pid=20601086&sid=a8EAvfD5BgIA&refer=latin\\_america](http://www.bloomberg.com/apps/news?pid=20601086&sid=a8EAvfD5BgIA&refer=latin_america)

*Investment and financial flows relevant to the development of effective and appropriate international response to Climate Change*

[http://unfccc.int/cooperation\\_and\\_support/financial\\_mechanism/items/4053.php](http://unfccc.int/cooperation_and_support/financial_mechanism/items/4053.php)

Australia First to Model Continental Shoreline Climate Impacts

<http://www.ens-newswire.com/ens/aug2007/2007-08-23-01.asp>

Prepare for another ten scorching years

<http://environment.newscientist.com/article/dn12453-prepare-for-another-ten-scorching-years.html>

Global warming will bring stronger storms and tornadoes

[http://www.terradaily.com/reports/Global\\_warming\\_will\\_bring\\_stronger\\_storms\\_tornadoes\\_study\\_999.html](http://www.terradaily.com/reports/Global_warming_will_bring_stronger_storms_tornadoes_study_999.html)

NASA Study Predicts More Severe Storms With Global Warming

[http://www.nasa.gov/centers/goddard/news/topstory/2007/moist\\_convection.html](http://www.nasa.gov/centers/goddard/news/topstory/2007/moist_convection.html)

Vienna Climate Change Talks 2007

[http://unfccc.int/meetings/intersessional/awg\\_4\\_and\\_dialogue\\_4/items/3999.php](http://unfccc.int/meetings/intersessional/awg_4_and_dialogue_4/items/3999.php)

UN-backed global climate change meeting kicks off

<http://www.un.org/apps/news/story.asp?NewsID=23602&Cr=climate&Cr1=change>

Australian PM Says APEC to Tackle Energy Savings

<http://www.planetark.com/dailynewsstory.cfm/newsid/43975/story.htm>

Background paper on Analysis of existing and planned investment and financial flows relevant

to the development of effective and appropriate international response to climate change

[http://unfccc.int/files/cooperation\\_and\\_support/financial\\_mechanism/application/pdf/background\\_paper.pdf](http://unfccc.int/files/cooperation_and_support/financial_mechanism/application/pdf/background_paper.pdf)

Vienna Climate Change Talks 2007. AWG4 and the Dialogue 4

<http://www.iisd.ca/climate/awg4/> (This site might be slow in opening, owing to many graphics.)

Kyoto Protocol Parties move closer to trading emission allowances

[http://unfccc.int/files/press/news\\_room/press\\_releases\\_and\\_advisories/application/pdf/070830\\_press\\_rel\\_itl.pdf](http://unfccc.int/files/press/news_room/press_releases_and_advisories/application/pdf/070830_press_rel_itl.pdf)

Countries agree on need of global response at UN climate change conference

<http://www.un.org/apps/news/story.asp?NewsID=23671&Cr=climate&Cr1=>

## **NEW INITIATIVES AIMING TO INCREASE ECO-EFFICIENCY**

### **Corporate CEOs Pledge Actions on Climate Change at UN Global Compact Summit**

#### *Military implications:*

The Global Compact list of corporations should be reviewed to see which ones are military contractors. Those who are could be invited to help implement the Army Strategy on the Environment. Those military contractors who are not yet members, but who are involved in sustainability initiatives with the military might be encouraged to join the Global Compact to further their sustainability capacity. About 4,000 private companies, trade unions, and NGOs from 116 countries have subscribed to the Global Compact's ten universal principles relating to human rights, labor rights, the environment and the struggle against corruption.

#### *Sources:*

Companies pledge at U.N. to cut carbon burdens

<http://www.reuters.com/article/ousiv/idUSL0654572920070706>

Participants Pledge to Pursue More Sustainable, Inclusive Economy

<http://www.un.org/News/Press/docs/2007/eco119.doc.htm>

Caring For Climate: The Business Leadership Platform (text of the statement)

[http://www.unglobalcompact.com/docs/issues\\_doc/Environment/CaringforClimate\\_27June.pdf](http://www.unglobalcompact.com/docs/issues_doc/Environment/CaringforClimate_27June.pdf)

Companies Commit to Reducing Climate Risks

<http://www.worldwatch.org/node/5194>

### **Global Trends in Sustainable Energy Investment 2007**

#### *Military Implications:*



Military personnel with sustainable energy decision responsibility should review the report for potential inputs to their own R&D programs.

*Source:*

Global Trends in Sustainable Energy Investment 2007— Analysis of Trends and Issues in the Financing of Renewable Energy and Energy Efficiency in OECD and Developing Countries  
[http://www.unep.org/pdf/SEFI\\_report-GlobalTrendsInSustainableEnergyInvestment07.pdf](http://www.unep.org/pdf/SEFI_report-GlobalTrendsInSustainableEnergyInvestment07.pdf)

## **Renewable Energy Projects May Face New Scrutiny**

*Military Implications:*

Criticism of some renewable energy technologies is increasing. Military representatives involved in international environmental discussions should review these arguments and be prepared to present an informed military viewpoint on them. It will be essential to be wary of special interests on all sides of this debate arguing with partial truths, since competition for projects will likely underlie many agendas.

*Source:*

Renewable energy wrecks environment, scientist claims  
[http://www.world-science.net/othernews/070724\\_renewable.htm](http://www.world-science.net/othernews/070724_renewable.htm)

## **US EPA recommendations for "Green Infrastructure"**

*Military Implications:*

Military personnel with installation planning responsibilities should visit this site for techniques in construction and remodeling that could be environmentally beneficial.

*Source:*

Green infrastructure  
[http://cfpub.epa.gov/npdes/home.cfm?program\\_id=298](http://cfpub.epa.gov/npdes/home.cfm?program_id=298)

## **Green Un-building Becomes Major Environmental Goal**

*Military Implications:*

The military should ensure that all activities, installations, and civil works are aware of the importance of this concept, and are carrying it out to the maximum practical extent.

*Source:*

The House That Love Un-Built. Green un-building catching on in the U.S.  
<http://www.grist.org/news/2007/10/18/recycHouse/>

## **Green Information Technology Is Forecast as 2008 Top IT Strategy**

*Military Implications*

Military components responsible for IT installations should be sure that adequate attention is being paid to environmental considerations in planning future developments. Military personnel should consider attending the Conference, to hear the views of a large panel of distinguished experts.

*Sources:*

Conference site: <http://www.aitglobal.com/>  
Green IT Will Be 2008's Top Strategic Technology: Gartner  
[http://www.greenercomputing.com/news\\_third.cfm?NewsID=36071](http://www.greenercomputing.com/news_third.cfm?NewsID=36071)